E 21 200 E

SYNTHESIS

International Journal of Methods in Synthetic Organic Chemistry

Georg Thieme Verlag Stuttgart · New York

Index 1980

EASTERN MICHIGAN UNIVERSITY
LIBRARY

JUN 22 1981

SCIENCE & TECHNOLOGY

INTERNATIONAL JOURNAL OF METHODS
IN SYNTHETIC ORGANIC CHEMISTRY

1980

SYNTHESIS

REVIEWS · COMMUNICATIONS · ABSTRACTS

EDITORS

G. SCHILL, Freiburg/Br.

G. SOSNOVSKY, Milwaukee/Wis.

H. J. ZIEGLER, Basel

ADVISORY BOARD

D. H. R. BARTON, Gif-sur-Yvette
K. BERNAUER, Basel
H. C. BROWN, Lafayette/Ind.
E. J. COREY, Cambridge/Mass.
I. FLEMING, Cambridge
H. HELLMANN, Marl
W. S. JOHNSON, Standford/Calif.
M. I. KABACHNIK, Moscow
J. MATHIEU, Romainville
W. P. NEUMANN, Dortmund
R. ODA, Kyoto
G. A. OLAH, Los Angeles/Calif.
E. G. ROZANTSEV, Moscow
H. E. SIMMONS, Wilmington/Del.
F. SONDHEIMER, London
F. ŠORM, Prague
H. A. STAAB, Heidelberg
E. E. VAN TAMELEN, Standford/Calif.
K. WEISSERMEL, Frankfurt/Main
R. WEST, Madison/Wis.
G. WILKE, Mülheim/Ruhr

EDITORIAL OFFICE

R. E. DUNMUR, W. LÜRKEN
P. O. Box 732 · Herdweg 63 · D-7000 Stuttgart 1
Phone 0711/2047209 · Telex 721942
Cable address: Thiemebuch Stuttgart

GEORG THIEME VERLAG · STUTTGART · NEW YORK

© 1981 Georg Thieme Verlag · Stuttgart · New York – Printed in Germany – Druck: Zechnersche Buchdruckerei, Speyer.

SYNTHESIS 1980

Subject Index 1049
Errata and Addenda 1090
Author's Guidelines 1092

Reviews

Becher, J.: Synthesis and Reactions of Glutaconaldehyde and 5-Amino-2,4-pentadienals . . 589 (erratum: 1091)

Coppola, G.M.: The Chemistry of Isatoic Anhydride . . . . . 505 (errata: 1091)

Felker, D., see Groutas, W.C. 861

Fischer, R.H., Weitz, H.M.: Preparation and Reactions of Cyclic α-Nitroketones 261

Furin, G.G., see Yakobson, G.G. 345

Gorbatenko, V.I., Samarai, L.I.: Synthesis and Reactions of α-Haloalkyl Isocyanates . . . 85 (erratum: 1090)

Groutas, W.C., Felker, D.: Synthetic Applications of Cyanotrimethylsilane, Iodotrimethylsilane, Azidotrimethylsilane, and Methylthiotrimethylsilane 861

Pillai, V.N.R.: Photoremovable Protecting Groups in Organic Synthesis . . . . . 1 (errata: 1090)

Pinder, A.R.: The Hydrogenolysis of Organic Halides 425

Samarai, L.I., see Gorbatenko, V.I. 85

Schmidt, A.H.: Reaktionen von Quadratsäure und Quadratsäure-Derivaten 961

Wagner-Jauregg, T.: Thermische und photochemische Additionen von Dienophilen an Arene und deren Vinyloge und Hetero-Analoge; Teil I . . . . . 165 (errata: 1090)
Teil II . . . . . 769 (errata: 1090)

Walsh, D.A.: The Synthesis of 2-Aminobenzophenones . . . . . 677 (erratum: 1091)

Weitz, H.M., see Fischer, R.H. 261

Yakobson, G.G., Furin, G.G.: Antimony Pentahalides as Catalysts of Friedel-Crafts Type Reactions 345

Communications

Abe, H., see Marino, J.P. 872

Adam, W., Balci, M., Pietrzak, M., Rebollo, H.: Oxygen Functionalization of Cycloheptatriene via Sensitized Photo-Oxygenation 820

Adamczyk, M., Mirek, J., Mokrosz, M.: Syntheses with Unsaturated Nitriles; II. Selective Monoesterification of 2,6,6-Tricyano-2-cyclohexenones by Transannular Rearrangement 916

Adamczyk, M., see Mirek, J. 296

Addison, P.L., see Coyle, J.D. 403

Agawa, T., Ishida, M., Ohshiro, Y.: Novel Synthesis of α-Methylene-β-lactams 933

Aggarwal, V., see Kumar, A. 748

Ahlbrecht, H., Düber, E.O.: *N*-Silylenamine durch Silylierung von Iminen mit Trimethylsilyl-triflat 630

Ahlbrecht, H., Pfaff, K.: Die Michael-Addition von Enolaten und Enaminaten an 2-(*N*-Methylanilino)-acrylonitril. Eine einfache und vielseitige Synthese von 1,4-Dicarbonyl-Verbindungen 413

Ahlbrecht, H., Raab, W.: 2-Aminopropene (Aceton-Enamine) durch Dehydrocyanierung der α-Aminonitrile 320

Ahluwalia, V.K., Prakash, C., Gupta, R.: A Facile Synthesis of 3-Allylcoumarins 48

Ahmed, K., see Ramamohan Rao, B. 155

Akabori, S., Ohtomi, M., Takahashi, K., Sakamoto, Y., Ichinohe, Y.: One-Step Synthesis of 4-Cyano-3,3-diaryl-5-methyl-2-oxo-2,3-dihydropyrroles through the Benzilic Acid Rearrangement 900

Akhrem, A.A., Chernov, Y.G.: A New Anellation Reaction of Cyclic Schiff Bases 996

Akita, Y., see Watanabe, T. 39

Alajarín, M., Fresneda, P.M., Molina, P.: A Convenient One-Step Synthesis of Aroyl Cyanides from Arylglyoxals or Phenacyl Bromides 844

Albert, H.J., Neumann, W.P.: A Convenient Preparation of Tri-*n*-butyltin Deuteride and Some Other Triorganotin Deuterides 942

Alkhader, M.A., Smalley, R.K., Mohajerani, B.: Synthesis of Polynuclear Heterocycles; Part 5. New Selective Methods for the Synthesis of Indazolo[2,3-*a*][3,1]benzoxazin-5-ones and Indazolo[2,1-*g*]indazole-6,12-diones 381 (erratum: 1090)

Almqvist, K.A., see Reinecke, M.G. 327

Alper, H., Laycock, D.E.: Crown Ether-Catalyzed Synthesis of Fulvenes in a Solid-Liquid Two-Phase System . . . . . 799 (erratum: 1091)

Alsaidi, H., Gallo, R., Metzger, J.: Convenient Synthesis of Heteroaryl Phenyl Ethers from Chloropyridines and Chloroquinolines using Phase-Transfer Catalysis 921

Ambasht, S., Chiu, S.K., Peterson, P.E., Queen, J.: Preparation of Trimethylsilylmethyl Derivatives Using Phase-Transfer Methods 318

Anani, A.A., see El-Abadelah, M.M. 146

Anders, E., Will, W.: 1-Acyl-4-benzyliden-1,4-dihydropyridine; V. Eine einfache und allgemein anwendbare Methode zur Herstellung von Carbonsäure- und Kohlensäure-estern tertiärer Alkohole 485

Andrade, J.G., Maier, W.F., Zapf, L., Schleyer, P.v.R.: Catalytic Hydrogenolysis; III. Direct Transformation of Cyano into Methyl Groups 802

Angelastro, R., see Levy, A.B. 945

Anwer, M.K., Spatola, A.F.: An Advantageous Method for the Rapid Removal of Hydrogenolysable Protecting Groups under Ambient Conditions; Synthesis of Leucine-enkephalin . . . 929

Aoyama, T., see Asai, T. 811

Arai, K., see Fukada, N. 566

Arques, A., Molina, P., Soler, A.: A New Synthesis of Nitriles from Aldehydes 702

Artaud, I., Seyden-Penne, J., Viout, P.: Stereoselective Synthesis of Cyclopropyl Ketones using Phase-Transfer Catalysis 34

Arvanaghi, M., see Olah, G.A. 141, 220, 660, 662

Asai, T., Aoyama, T., Shioiri, T.: New Methods and Reagents in Organic Synthesis; 7. α-Alkylation of Benzylamine under Phase-Transfer Catalyzed Conditions 811

Aslam, M., see King, J.F. 285

Attanasi, O., Serra-Zanetti, F.: Effect of Metal Ions in Organic Synthesis; VII. Conversion of Acylhydrazines and *N*-Acyl-*N'*-tosylhydrazines to Carboxylic Acids and Esters in the Presence of Copper(II) Chloride 314

Atta-ur-Rahman, Ghazala, M.: Reactions of Harmaline and its Derivatives; VI. The Partial Syntheses of 11-Methoxyrutaecarpine and 11-Methoxynauclefine 372

Augustin, M., see Rudorf, W.D. 1022

Autin, J.M., see Mouzin, G. 54

Axiotis, G.P., see Chastrette, M. 889

Azhayev, A.V., see Ozols, A.M. 557, 559

Badet, B., Julia, M., Ramirez-Muñoz, M.: Phase-Transfer Alkylation with Sulfonium Salts . . 926

Bal, M.S., see Singh, H. 1020

Balaban, A.T., Bota, A., Zlota, A.: 1,1-Bis[2-furyl]-ethanes from 1-(2-Furyl)-ethanols 136

Balasubramanian, K.K., Selvaraj, S.: Studies on *o*-Quinone Methides; Part IV. Alkylation of Phenolic Mannich Bases with Aryl Phenacyl Sulfones 138

Balasubramanian, K.K., Selvaraj, S., Venkataramani, P.S.: Trimerisation of Aryl Ethynyl Ketones 29

Balci, M., see Adam, W. 820

Bałczewski, P., see Mikołajczyk, M. 127

Ballatore, A., see Yanami, T. 407

Banerji, A., Goomer, N.C.: A New Synthesis of Flavones 874

Barbry, D., Couturier, D., Ricart, G.: Synthesis of Hexahydro[1,3]thiazolo[3,2-*a*]pyridines (7-Thia-1-azabicyclo[4.3.0]nonanes) 387

Bartoli, G., Bosco, M.: Reactivity of Nitroarenes towards Grignard Reagents; General Synthesis of Alkyl-Chloro Compounds in Aromatic Bicyclic Systems 616

Barton, D.H.R., Bringmann, G., Motherwell, W.B.: Radical-Induced Reductive Deamination of Amino Acid Esters 68

Barton, D.H.R., see Britten-Kelly, M. 27

Basyouni, M.N., Omar, M.T., Ghali, E.A.: A New Synthesis of 2,2-Disubstituted 1,3-Benzodithiole Derivatives 115

Batten, R.J., Coyle, J.D., Taylor, R.J.K.: The Synthesis of 2-Substituted Thian-4-ones using Organocuprates 910

Batten, R.J., Dixon, A.J., Taylor, R.J.K., Newton, R.F.: A New Method for Removing the *t*-Butyldimethylsilyl Protecting Group 234

Baugh, T.D., see Zoltewicz, J.A. 217

Becher, J., see Christensen, M.C. 405

Becker, K.B.: Preparation of 2,3-Dialkylcyclohexa-1,3-dienes by the Bis-Wittig Reaction 238

Bélanger, D., see Cannone, P. 301

Belica, P.S., see Manchand, P.S. 409

Belli, A., Giordano, C., Citterio, A.: Benzyl Acetates by Acetoxylation of Methylbenzenes using Peroxydisulfate as Oxidizing Agent 477

Bergman, J., Engman, L.: New Synthesis of Diorganyl Selenides and Diorganyl Tellurides from Tetraalkylammonium Borohydrides 569

Bernardi, R., Fuganti, C., Graselli, P., Marinoni, G.: Synthesis of the Enantiomeric Forms of 4-Hexanolide (γ-Caprolactone) from the Optically Active 5-Phenyl-4-pentene-2,3-diol Prepared from Cinnamaldehyde and Baker's Yeast 50

Bernasconi, S., Comini, A., Corbella, A., Garibaldi, P., Sisti, M.: Activation of 2-Alkenoic Acids as Mixed Anhydrides with Diphenylphosphinic Acid for the Formation of Carboxamides 385

Bernauer, K., see Borgulya, J. 545

Bernier, J.L., see Henichart, J.P. 311

Berrier, A.L., see Olah, G.A. 45

Bertz, S.H.: An Improved Synthesis of Some Highly Substituted Phenols – The Prelog Condensation with 2,4,5-Heptanetrione 708

Bésán, J., Kulcsár, L., Kovács, M.: A Newer Synthesis of Formamidines Used as Acaricide Insecticides 883

Bhatt, M.V., see Perumal, P.T. 943

Bigi, F., Casiraghi, G., Casnati, G., Sartori, G.: Unusual Friedel-Crafts Reactions; 2. An Improved Synthesis of 2,4-Disubstituted 4*H*-1,3-Benzodioxins from Phenols and Aliphatic Aldehydes 724

Biloski, A.J., Heggs, R.P., Ganem, B.: Catalytic Epoxidation of Alkenes with Hexafluoroacetone/Hydrogen Peroxide: 4,4-Dimethyl-3,5,8-trioxabicyclo[5.1.0]octane 810

Bilyard, K.G., Garratt, P.J., Zahler, R.: Dimetallated Vicinal Diesters. Reaction with α,ω-Dihalides and Ditosylates; A New Method of Anellation for the Preparation of Bicyclo-[x,y,0]alkanes 389

Bloomer, J.L., Damodaran, K.M.: An Efficient Synthesis of Homogentisic Acid 111

Bodnarchuk, N.D., see Momot, V.V. 571

Boland, W., Ney, P., Jaenicke, L.: "One-Pot" Conversion of Carboxylic Acid Esters and Lactones to Olefinic Compounds 1015

Bongini, A., Cainelli, G., Contento, M., Manescalchi, F.: Anion-Exchange Resins as Halogen Carriers in the Bromination and Chlorobromination of Organic Compounds 143

Boniardi, O., see Donetti, A. 1009

Borgulya, J., Bernauer, K.: Transformation of Carboxylic Acid *t*-Butyl Esters into the Corresponding Trimethylsilyl Esters or Free Acids under Non-Acidic Conditions 545

Bosco, M., see Bartoli, G. 616

Bota, A., see Balaban, A.T. 136

Bouchu, M.N., see Lesiak, J. 240

Bowers, W.S., see Camps, F. 725

Bradsher, C.K., see Reames, D.C. 454

Briggs, E.M., Brown, G.W., Jiricny, J., Meidine, M.F.: Synthetic Uses of Iminophosphoranes. Monoalkylation of Primary Aromatic Amines 295

Bringmann, G., see Barton, D.H.R. 68

Britten-Kelly, M., Willis, B.J., Barton, D.H.R.: Michael Additions to Alkyl-Substituted Divinyl Ketones 27

Brown, G.W., see Briggs, E.M. 295

Brown, H.C., Kulkarni, S.U., Rao, C.G.: Highly Selective Conversion of Terminal Olefins into Aldehydes 151

Brown, H.C., Mandal, A.K.: Borane:1,4-Oxathiane – A New Convenient Hydroborating Agent 153

Bubnov, Y.N., Grigorian, M.S., Tsyban, A.V., Mikhailov, B.M.: A Convenient Synthesis of 2-Alkoxy-1,4-pentadienes from Unsymmetrical Allyldialkylboranes or Alkyldiallylboranes 902

Bubnov, Y.N., Tsyban, A.V., Mikhailov, B.M.: A Convenient Synthesis of 1,4-Pentenynes (Allylacetylenes) via Allylboranes 904

Burgada, R., see Fauduet, H. 642

Burgstahler, A.W., Sanders, M.E.: *N,N*-Dideuterated Alkylamines from *N*-Benzylidenealkylamines. Improved Lithium/Ethylamine Reduction of α,β-Unsaturated Ketones 400

Burns, H.D., see Foster, N.I. 572

Butina, D., Sondheimer, F.: Synthesis of 1-Cyclopentene-1,2-dicarboxaldehyde and 1-Cyclobutene-1,2-dicarboxaldehyde 543

Cacchi, S., Misiti, D., Felici, M.: *C*-Alkylation of Tosyl- and 2,4-Dinitrophenylhydrazones through an *in situ* Sequence under Phase-Transfer Conditions 147

Cacchi, S., Misiti, D., La Torre, F.: Amides from Nitriles using Basic Hydrogen Peroxide under Phase-Transfer Catalysed Conditions 243

Caggiano, T.J., see Williams, J.R. 1024

Cainelli, G., see Bongini, A. 143

Calvin, M., see Okuno, Y. 537

Camps, F., Coll, J., Messeguer, A., Pericás, M.A.: A Simple Method for Preparation of Aryl 2,2,2-Trifluoroethyl Ethers 727

Camps, F., Coll, J., Messeguer, A., Pericás, M.A., Ricart, S., Bowers, W.S., Soderlund, D.M.: An Improved Procedure for the Preparation of 2,2-Dimethyl-4-chromanones 725

Cannone, P., Bélanger, D., Lemay, G.: A Facile Synthesis of Spirochromanes – 3,4-Dihydrospiro[2*H*-1-benzopyran-2,1'-cycloalkanes] 301

Cardellini, M., Cingolani, G.M., Claudi, F., Gulini, U., Martelli, S.: Alkylthiolation of 2-Methylindolizine 886

Carson, J.F.: The Preparation of Methionine-Containing Peptides with Trifluoroacetyl Protection of Amino Groups and 2,2,2-Trichloroethyl Ester Protection of Carboxy Groups . 730

Casiraghi, G., Casnati, G., Puglia, G., Sartori, G.: Selective Reactions between Phenols and Formaldehyde. A Superior Synthesis of Salicyl Alcohols 124

Casiraghi, G., see Bigi, F. 724

Casnati, G., see Bigi, F. 724

see Casiraghi, G. 124

Cativiela, C., Meléndez, E.: Stereospecific Synthesis of (*Z*/*E*)-Isomers of 2-Benzoylamino-3-phenyl-2-butenoic Acids 901

Cerfontain, H., van Noort, P.C.M.: Facile Photochemical Synthesis of Some 4-Oxoalkanoic Acids and Esters 490

Chabannet, M., see Gelin, S. 875

Chastrette, M., Axiotis, G.P.: An Efficient General Synthesis of α-Amino Acetals 889

Chatterjee, A., Mallik, R.: The Use of Diethyl 3-Oxoheptanedioate in the Pechmann Cyclocondensation 715

Chatterjee, B.G., see Ray, J.K. 326

Chen, S., see Cheng, Y.-S. 223

Chêne, A., see Cristau, H.J. 551

Cheng, Y.-S., Liu, W.-L., Chen, S.: Pyridinium Chlorochromate Adsorbed on Alumina as a Selective Oxidant for Primary and Secondary Alcohols 223

Chernov, Y.G., see Akhrem, A.A. 996

Chiavari, G., see Giumanini, A.G. 743

Chiu, S.K., see Ambasht, S. 318

Chow, Y.L., Richard, H., Sakaino, Y.: Synthesis of 12-Dimethylaminododecadienol: A Novel Cleavage Reaction of Cyclic Amino Nitrate Esters 818

Christensen, M.C., Dreier, C., Becher, J.: Pyridinethiones; IV. A Convenient Simultaneous *N*-Dealkylation, Acetalisation, and *S*-Alkylation of 3-Formyl-2(1*H*)-pyridinethiones 405

Christol, H., see Cristau, H.J. 551

Cignarella, G., Grella, G., Curzu, M.M.: Hydroxymethylation of 3-Aroylpropanoic Acids;

An Improved Synthesis of 4-Aroyl-2(3*H*)-dihydrofuranones and an Easy Approach to 3-Aroyl-3-butenoic Acids 825

Cingolani, G.M., see Cardellini, M. 886

Citterio, A., Vismara, E.: 2-Arylalkyl Ketones and 3-Arylalkanals from Arenediazonium Salts and α,β-Unsaturated Carbonyl Compounds 291

One-Step Synthesis of 9-Oxodecanoic Acid and its Methyl Ester; A Useful Starting Material for Prostaglandin Synthesis 751

Citterio, A., see Belli, A. 477

Clarke, I.S., see Radatus, B.K. 47

Claudi, F., see Cardellini, M. 886

Clerici, M.G., Maspero, F.: Catalytic *C*-Alkylation of Secondary Amines with Alkenes 305

Cohen, V.I.: A Convenient Synthesis of Mono-, *N,N'*-Di-, and Trisubstituted Selenoureas from Methyl Carbamimidothioates (*S*-Methyl-pseudothioureas) . . . . . 60 (erratum: 1090)

Cole, C.A., see Pan, H.L. 813

Coll, J., see Camps, F. 725, 727

Comini, A., see Bernasconi, S. 385

Contento, M., see Bongini, A. 143

Coppola, G.M., Hardtmann, G.E.: Synthesis of 4,5-Dihydro-1,3-oxazoles and 5,6-Dihydro-4*H*-1,3-oxazines 63

Corbella, A., see Bernasconi, S. 385

Cornelis, A., Laszlo, P.: Oxidation of Alcohols by Clay-Supported Iron(III) Nitrate; A New Efficient Oxidizing Agent 849

Coudert, G., see Loubinoux, B. 638

Cousse, H., see Mouzin, G. 54

Cousseau, J.: A New Route to 2-Bromo-1-alkenes by Hydrobromination of 1-Alkynes with Tetraethylammonium Hydrogen Dibromide 805

Couturier, D., see Barbry, D. 387

Coyle, J.D., Addison, P.L., Farmer, J.L., Haws, E.J., Small, P.W.: Synthesis of 2,4-Benzodiazepines from Phthalimide Mannich Bases 403

Coyle, J.D., see Batten, R.J. 910

Craig, G.W., see Smith, K.M. 493

Craig, J.C., Ekwuribe, N.N.: Improved Preparation of 1-Deuteriated Benzaldehydes 909

Cristau, H.J., Chêne, A., Christol, H.: Synthesis of Aminophosphonium Salts by Arylation of Aminophosphines 551

Curzu, M.M., see Cignarella, G. 825

Czech, B., Quici, S., Regen, S.L.: Convenient Synthesis of Organic Sulfides Using Impregnated Reagents 113

Dämbkes, G., see Stetter, H. 309

Dahlhoff, W.V., Geisheimer, A., Köster, R.: Organoboron-Monosaccharides; IX. Efficient Synthesis of a Protected α-D-Mannofuranosyl Bromide 935

Dahlhoff, W.V., Köster, R.: Organoboron-Monosaccharides; X. High-Yield Synthesis of a Bifunctionally Protected α-D-Lyxofuranosyl Bromide 936

Dalzell, H.C., see Duffley, R.P. 733

Damodaran, K.M., see Bloomer, J.L. 111

D'Auria, M., Piancatelli, G., Scettri, A.: A Mild and Selective Reduction of Enedicarbonyl Compounds 245

Davies, L.C., Farmer, P.B., Jarman, M., Stock, J.A.: Two-Stage Synthesis of 3'-*O*-Tritylthymidine via Hydrolysis of 3',5'-Di-*O*-tritylthymidine; Comparison with Alternative Methods 75

De Araújo, H.C., see Mahajan, J.R. 64

Degani, I., Fochi, R., Regondi, V.: Phase-Transfer Synthesis of Symmetrical *S,S*-Dialkyl Dithiocarbonates via *O*-Methyl *S*-Alkyl Dithiocarbonates 375

Delmas, M., Gaset, A.: Selective Synthesis of 4-Aryl-1,3-dioxanes from Arylalkenes and Paraformaldehyde using an Ion-Exchange Resin as Catalyst; Extension to Natural Compounds 871

Dersch, R., Reichardt, C.: Dichloromalondialdehyd . 940

Descotes, G., see Lesiak, J. 240

Deshayes, C., Gelin, S.: Synthesis of 1,4,5,6-Tetrahydropyridazin-4-ones from γ,δ-Unsaturated β-Ketoesters and γ,δ-Unsaturated β-Diketones 623

Devínsky, F., Lacko, I., Krasnec, L.: A Convenient Synthesis of Secondary *N,N'*-Dimethylalkanediamines 303

DeWitt Blanton, C., see Nixon, W.J. 56

Dhekne, V.V., Rao, A.S.: Synthesis of 2,3-*trans*-Disubstituted 2,3-Dihydrobenzofurans 58

Diago-Meseguer, J., Palomo-Coll, A.L., Fernández-Lizarbe, J.R., Zugaza-Bilbao, A.: A New Reagent for Activating Carboxy Groups; Preparation and Reactions of *N,N*-Bis[2-oxo-3-oxazolidinyl]-phosphorodiamidic Chloride . . . . . 547 (erratum: 1091)

Di Cesare, P., Duchaussoy, P., Gross, B.: An Improved Permethylation Reaction in the Osidic Series using a Catalytic Two-Phase System 953 (erratum: 1091)

Di Cesare, P., Gross, B.: An Easy Synthesis of Osidic Dithiocarbonates in a Two-Phase System 714

Dietschmann, H., see Ried, W. 619

Dixon, A.J., see Batten, R.J. 234

Dixon, D.D., Ford, M.E.: Preparation of *N*-Acyl-Substituted Tetrachlorocyclopentadienone Hydrazones 306

Dodd, J.H., see Hauser, F.M. 72

Donetti, A., Boniardi, O., Ezhaya, A.: Phase-Transfer Catalyzed Oxidative Decyanation of α-Secondary Nitriles; A Convenient Synthesis of Aromatic Ketones 1009

Drabowicz, J.: Rapid Deoximation with Pyridinium Chlorochromate/Hydrogen Peroxide System 125

Drabowicz, J., Mikołajczyk, M.: A Simple Procedure for the Oxidation of Thiols to Disulphides by Means of Bromine/Aqueous Potassium Hydrogen Carbonate in a Two-Phase System 32

Dreier, C., see Christensen, M.C. 405

Dryanska, V., Ivanov, C.: Michael Condensation of 2-Benzylbenzazoles 317

Duchaussoy, P., see Di Cesare, P. 953

Düber, E.O., see Ahlbrecht, H. 630

Duffley, R.P., Handrick, G.R., Uliss, D.B., Lambert, G., Dalzell, H.C., Razdan, R.K.: Synthesis of 2′- and 3′-Acetoxyolivetols [5-(2- and 3-Acetoxypentyl)-1,3-benzenediols]: Key Intermediates in the Synthesis of Tetrahydrocannabinol Derivatives 733

Durette, P.L.: An Expeditious Synthesis of Methyl 2,6-Dideoxy-α-D-*arabino*-hexopyranoside 1037

Dyatkina, N.B., see Ozols, A.M. 557

Eckert, H., Kiesel, Y.: Redox-Katalysator Kobaltphthalocyanin: Deblockierung von 2-Halogenoalkyl-Verbindungen 947

Eda, T., see Yoshihara, M. 746

Eguchi, S., see Sasaki, T. 472

Ehlers, J., see Schaumann, E. 907

Eivazi, F., see Smith, K.M. 493

Ekwuribe, N.N., see Craig, J.C. 909

El-Abadelah, M.M., Khan, Z.H., Anani, A.A.: Facile Reduction of Benzofuroxans to *ortho*-Quinone Dioximes 146

El Gendy, A.M., Mallouli, A., Lepage, Y.: Synthesis of 1,4-Diaryl-2,3-diformylbutadienes 898

El Sawy, O.M., see Ismail, M.F. 410

Endo, Y., Shudo, K., Okamoto, T.: An Acid-Catalyzed Rearrangement of *O*-Aryl-*N*-benzoylhydroxylamines; Synthesis of Catechols from Phenols 461

Engman, L., see Bergman, J. 569

Erle, H.E., see Ried, W. 619

Ezhaya, A., see Donetti, A. 1009

Farachi, C., see Santaniello, E. 563

Fariña, F., Torres, T.: Synthesis of 6-Oxo-5,6,7,8-tetrahydro-1,4-naphthoquinone and Derivatives and a New, Convenient Preparation of *o*-Naphthazarin 753

Farmer, J.L., see Coyle, J.D. 403

Farmer, P.B., see Davies, L.C. 75

Fateen, A.K., Moustafa, A.H., Kaddah, A.M., Shams, N.A.: Different Regioselective Behaviour of Organolithium and Organomagnesium Reagents toward Pyridazine Derivatives 457

Fauduet, H., Burgada, R.: A Convenient Synthesis of Polysubstituted Cyclopropanes 642

Feldmann, J., see Paulsen, H. 636

Felici, M., see Cacchi, S. 147

Fernández-Lizarbe, J.R., see Diago-Meseguer, J. . . . 547

Ferraboschi, P., see Santaniello, E. 646

Fletcher, T.L., see Pan, H.L. 813

Fochi, R., see Degani, I. 375

Föhlisch, B., Giering, W.: 3-Trimethylsiloxypropensäure-ethylester, ein beständiges Äquivalent des Formylessigsäure-ethylesters 231

Ford, M.E., see Dixon, D.D. 306

Ford, W.E., see Okuno, Y. 537

Forlani, L.: 2,4-Diamino-1,3-thiazole Hydrotribromide; A New Brominating Agent 487

Foster, N.I., Heindel, N.D., Burns, H.D., Muhr, W.: Aryl Iodides from Anilines via Triazene Intermediates 572

Foucaud, A., see Morel, G. 918

Franck, R.W., see Noire, P.D. 882

Fresneda, P.M., see Alajarín, M. 844

Fritz, H., see Schill, G. 370

Fuganti, C., see Bernardi, R. 50

Fujita, Y., see Onishi, T. 651

Fukata, G., see Tashiro, M. 495

Fukada, N., Arai, K., Takeshima, T., Muraoka, M.: A Convenient Synthesis of 2-Alkyliminocyclopentanedithiocarboxylic Acids by Reaction of Cyclopentanone with Carbon Disulfide in an Aqueous Amine Medium . 566

Fuks, R., van den Bril, M.: Amidinoethylation – A New Reaction; I. The Amidinoethylation of Thiols; A Facile Synthesis of 3-Alkylthio- and 3-Arylthiopropanamidines 121

Fuks, R., see van den Bril, M. 893

Fung, A.P., see Olah, G.A. 221, 657, 897

Funk, R.L., Vollhardt, K.P.C.: 2-Methyl-2-cyclopenten-1-one from 2-Methylcyclopentane-1,3-dione 118

Furukawa, K., see Senga, K. 479

Furukawa, M., Ohkawara, T., Noguchi, Y., Isoda, M., Hitoshi, T.: *O*-, *S*-, and *N*-Sulfinylations with Sulfinic Acids in the Presence of Phenyl Phosphorodichloridate and Pyridine 937

Gallo, R., see Alsaidi, H. 921

Gandhi, C.S., see Singh, H. 1020

Ganem, B., see Biloski, A.J. 810

Garcia-Luna, A., see Olah, G.A. 659, 661

Garibaldi, P., see Bernasconi, S. 385

Garland, J.T., see Nixon, W.J. 56

Garratt, P.J., see Bilyard, K.G. 389

Gaset, A., see Delmas, M. 871

Geisheimer, A., see Dahlhoff, W.V. 935

Gelas-Mialhe, Y., Vessière, R.: Reaction of *S,S*-Diphenylsulfilimine with Aldehydes; A New Synthesis of Nitriles 1005

Gelin, S., Chabannet, M.: Synthesis of Some Substituted 6-Oxo-6,7-dihydro-4*H*-pyrazolo-[5,1-*c*][1,4]oxazines from 3-Oxo-2,3-dihydrofurans 875

Gelin, S., see Deshayes, C. 623

Ghali, E.A., see Basyouni, M.N. 115

Ghazala, M., see Atta-ur-Rahman 372

Ghosh, C.K., Khan, S.: Heterocyclic Systems; 9. Reaction of 4-Oxo-4*H*-1-benzopyran-3-carboxaldehydes (3-Formylchromones) with 1,2-Diamines 701

Gibson, T.W.: Novel Synthesis of 25-Azacoprostane . 995

Giering, W., see Föhlisch, B. 231

Giordano, C., see Belli, A. 477

Giumanini, A.G., Chiavari, G., Musiani, M.M., Rossi, P.: *N*-Permethylation of Primary and Secondary Aromatic Amines 743

Gnuchev, N.V., see Ozols, A.M. 559

Goia, I., see Vlassa, M. 850

Goldmann, S.: Stereoselektive Synthese von Alkoholen; V. Einfache regioselektive Umwandlung von Alkyl-Ketonen in Allylalkohole . . 640

Goldstein, J.E., see Wollenberg, R.H. 757

Golubski, Z.E.: Alkylation of Phosphinic Acid Salts in the Presence of Crown Ethers 632

Goomer, N.C., see Banerji, A. 874

Gorbatenko, V.I., Lure, L.F.: Reactions of Chlorocarbonyl Isocyanate with Carbamates and Ureas Containing an N–H Bond 112

Gordon, M.S., Krause, J.G., Linneman-Mohr, M.A., Parchue, R.R.: Hydrazides and Hydrazones from Carbazates 244

Gosselck, J., see Stahl, I. 561

Goto, T., see Sato, R. 615

Gottikh, B.P., see Ozols, A.M. 559

Grabowski, E.J.J., see Serio Duggan, A.J. 573

Graselli, P., see Bernardi, R. 50

Grella, G., see Cignarella, G. 825

Griffith, J.R., see Keller, T.M. 613

Grigorian, M.S., see Bubnov, Y.N. 902

Gronowitz, S., see Lidert, Z. 322

Gross, B., see Di Cesare, P. 714, 953

Grzejszczak, S., see Mikołajczyk, M. 127

Grześkowiak, K.: 2-Cyanoethyl 2,2,2-Trichloroethyl Phosphorochloridate; An Effective Reagent for the Phosphorylation of Nucleosides . 831

Grzeskowiak, N.E., see Katritzky, A.R. 800

Gstach, H., see Schantl, J. 694

Guarna, A., see Mazza, L.J. 41

Guetté, J.P., see Guy, A. 222

Guillaumet, G., see Loubinoux, B. 638

Gulini, U., see Cardellini, M. 886

Gupta, B.G.B., see Olah, G.A. 44, 221, 657, 897

Gupta, R., see Ahluwalia, V.K. 48

Guseinov, M.M., see Veliev, M.G. 461

Guy, A., Guetté, J.P., Lang, G.: Utilization of Polyphosphoric Acid in the Presence of a Co-solvent 222

Guziec, F.S., Luzzio, F.A.: The Oxidation of Alcohols Using 2,2'-Bipyridinium Chlorochromate 691

Haefliger, W., Hauser, D.: A New Route to Annulated Furans 236

Hagihara, N., see Takahashi, S. 627

Hagio, K., see Moriya, T. 728

Haimova, M.A., Ognyanov, V.I., Mollov, N.M.: One-Pot Synthesis of 5,6-Dihydro-8*H*-dibenzo-[*a*,*g*]quinolizine-8-ones and Related Isoquinolines; A New Synthesis of Xylopinine 845

Hamada, Y., see Mizuno, A. 1007

Hanack, M., see Pawlowski, G. 287

Handrick, G.R., see Duffley, R.P. 733

Hanke, M., Jutz, C.: Synthese von 6,6'-Biazulenyl. . . 31

Hankovszky, H.O., Hideg, K., Lex, L.: Nitroxyls; VII. Synthesis and Reactions of Highly Reactive 1-Oxyl-2,2,5,5-tetramethyl-2,5-dihydropyrrole-3-ylmethyl Sulfonates 914

Hankovszky, H.O., see Hideg, K. 911

Happer, D.A.R., Steenson, B.E.: Preparation of α,β-Unsaturated Sulfones by the Knoevenagel Method 806

Hardtmann, G.E., see Coppola, G.M. 63

Harris, R.L.N.: The Synthesis of Triazines from *N*-Cyanoamidines 841

Harrison, C.R., Hodge, P.: Polymer-Supported Reagents: The Use of Polymer-Supported Cyanide and Thiocyanate to Prepare Nitriles, Thiocyanates, and Isothiocyanates 299 (erratum: 580)

Haruta, J., see Tamura, Y. 887

Harwood, L.M., Julia, M.: A Convenient Synthesis of (+)-β-Pinene from (+)-α-Pinene . . . 456 (erratum: 1090)

Hase, T.: Acyloins as Acyl-Anion Equivalents. The Synthesis of Ketones and Acyloxiranes . . . 36

Hata, T., see Nakagawa, I. 556

Hatamura, M., see Wakisaka, M. 67

Hatanaka, M., see Wakisaka, M. 67

Haug, E., see Kantlehner, W. 460

Hauser, D., see Haefliger, W. 236

Hauser, F.M., Pogany, S.A.: 2-Hydroxy-6-methylbenzoic Acid Derivatives 814

Hauser, F.M., Prasanna, S.: Ketone Transposition: 2(1*H*)-Tetralones from 1(2*H*)-Tetralones 621

Hauser, F.M., Rhee, R.P., Prasanna, S., Weinreb, S.M., Dodd, J.H.: *ortho*-Toluate Carbanion Chemistry; Sulfenylation and Selenation 72

Haws, E.J., see Coyle, J.D. 403

Hayashi, T., see Sakurai, A. 843

Heggs, R.P., see Biloski, A.J. 810

Heiker, F.R., see Paulsen, H. 636

Heindel, N.D., see Foster, N.I. 572

Henichart, J.P., Bernier, J.L., Houssin, R.: A Convenient Method for the Preparation of ω-Dialkylaminoalkyl Isothiocyanates 311

Henin, F., Pete, J.P.: An Easy Transformation of Ketones into α,α-Epoxymethylketones by Hydrogen Peroxide Oxidation of Mannich Base Derivatives 895

Hergott, H.H., Simchen, G.: Eine einfache Synthese von Trichloromethyltrimethylsilan und Carbonsäure-trimethylsilylestern 626

Herscheid, J.D.M., see Tijhuis, M.W. 890

Hershberger, J., Russell, G.A.: Reaction of 1-Alkenylmercury Halides with Sulfinate Anions to Form α,β-Unsaturated Sulfones 475

Heyns, K., see Paulsen, H. 636

Hibino, S., see Kano, S. 695, 741

Hideg, K., Hankovszky, H.O., Lex, L., Kulcsár, Gy.: Nitroxyls; VI. Synthesis and Reactions of 3-Hydroxymethyl-2,2,5,5-tetramethyl-2,5-dihydropyrrole-1-oxyl and 3-Formyl Derivatives 911

Hideg, K., see Hankovszky, H.O. 914

Hinman, C., Vaughan, K.: Active Esters of Anthranilic Acid; *N*-(*o*-Aminobenzoyloxy)-imides as Reagents for *o*-Aminobenzoylation . . . 719

Hisanaga, Y., see Yamauchi, K. 852

Hitoshi, T., see Furukawa, M. 937

Hodge, P., see Harrison, C.R. 299

Houssin, R., see Henichart, J.P. 311

Hüttenhain, S.H., see Reetz, M.T. 941

Hughey, J.L., Knapp, S., Schugar, H.: Dehydrogenation of 2-Imidazolines to Imidazoles with Barium Manganate 489

Hunt, D.A., see Reames, D.C. 454

Hutchins, R.O., see Zipkin, R.E. 1035

Hynninen, P.H., Lötjönen, S.: Preparation of Phorbin Derivatives from Chlorophyll Mixture Utilizing the Principle of Selective Hydrolysis . . . 539

Hynninen, P.H., see Lötjönen, S. 541

Ichinohe, Y., see Akabori, S. 900

Ikeda, I., Machii, Y., Okahara, M.: Direct Imination of Chalcones with Aminimide; Formation of Aziridines 650

Ila, H., see Kumar, A. 748

Imafuku, K., Sumio, M., Matsumura, H.: Synthesis of 3,4-Dihydro-2,2a,4,5-tetraazabenzo[*cd*]azulene Derivatives 331

Ishida, M., see Agawa, T. 933

Ishii, F., Kishi, K.: Oxidation of Hydroquinone and Catechols with Aqueous Sodium Hypochlorite under Phase-Transfer Catalysis 706

Ishimaru, T., see Wakisaka, M. 67

Ismail, M.F., Shams, N.A., El Sawy, O.M.: Synthesis of Some 3-Mercaptopyridazine Derivatives 410

Isoda, M., see Furukawa, M. 937

Ito, Y., see Ogura, K. 736

Itoh, E., see Mizuta, M. 721

Ivanov, C., see Dryanska, V. 317

Jaenicke, L., see Boland, W. 1015

Jarman, M., see Davies, L.C. 75

Jasiczak, J., see Smoczkiewicz, M.A. 739

Jeganathan, S., Kuila, D., Srinivasan, M.: Studies on Heterocyclic Compounds; III. Synthesis of Benzo[*g*]thieno[2,3-*a*]quinolizines 469

Jeganathan, S., Srinivasan, M.: Studies on Heterocyclic Compounds; IV. A Novel Synthesis of 5,6,8,12-Tetrahydro-13a*H*-thieno-[2′,3′:5,6][1,3]oxazepino[2,3-*a*]isoquinolines . . 1021

Jiricny, J., see Briggs, E.M. 295

Julia, M., see Badet, B. 926

see Harwood, L.M. 456

Julliard, M., Vernin, G., Metzger, J.: Triazenes; III. A Convenient Synthesis of Triazenes with Potential Anti-Tumor Activity 116

Junek, H., see Schmidt, H.W. 471

Junjappa, H., see Kumar, A. 748

Jurd, L., Manners, G.D.: Synthesis of 3-Iodoflavans and 2*H*-Flavenes 618

Jutz, C., see Hanke, M. 31

Kaddah, A.M., see Fateen, A.K. 457

Kaji, A., see Ono, N. 952

Kambe, S., Saito, K., Sakurai, A., Midorikawa, H.: A Simple Method for the Preparation of 2-Amino-4-aryl-3-cyanopyridines by the Condensation of Malononitrile with Aromatic Aldehydes and Alkyl Ketones in the Presence of Ammonium Acetate 366

A Simplified Procedure for the Preparation of 2-Alkoxycarbonyl-5-aryl-4-cyano-3-hydroxy-3-phenyltetrahydrothiophenes 839

Kambe, S., see Takajo, T. 833

Kamdar, B.V., see McCall, J.M. 123

Kano, S., Tanaka, Y., Sugino, E., Hibino, S.: Reduction of Some Functional Groups with Titanium(IV) Chloride/Sodium Borohydride . . . 695

Kano, S., Tanaka, Y., Sugino, E., Shibuya, S., Hibino, S.: Reductive Denitrosation of Nitrosamines to Secondary Amines with Metal Halide/Sodium Borohydride 741

Kantlehner, W., Haug, E., Mergen, W.W.: Eine einfache Methode zur Herstellung von Trimethylsilyl-cyanid, -isocyanat und -isothiocyanat 460

Kashima, C., Tajima, T.: Preparation of β-(1-Imidazolyl)-enones 880

Katada, T., see Mizuta, M. 721

Kato, M., see Yanami, T. 407

Kato, S., see Mizuta, M. 721

Katritzky, A.R., Winwood, D., Grzeskowiak, N.E.: Synthesis of 3,4,5-Trisubstituted-2(3*H*)-thiazolethiones via Metallation of 3,4-Disubstituted 2(3*H*)-Thiazolethiones 800

Keller, T.M., Price, T.R., Griffith, J.R.: Synthesis of Phthalonitriles by Nitro Displacement 613

Kemal, Ö., Reese, C.B.: Sodium Borohydride Reduction of Products Obtained from Reactions between Ribonucleosides, *p*-Thiocresol, and Aldehydes; Synthesis of *N*-Alkyl Nucleosides 1025

Kesavan, M., see Ranganathan, D. 884

Ketcham, R., Schaumann, E., Niemer, T.: Heterocyclic Ring-Closure Reactions; VII. A Facile Synthesis of 5-Imino-4-oxazolidinethiones and 4-Thioxo-5-oxazolidinones 869

Keumi, T., Murata, C., Sasaki, Y., Kitajima, H.: A Facile Synthesis of Unsymmetrically Methyl-Substituted 2-Hydroxybiphenyls by the Regioselective Cleavage of Dibenzofuran Derivatives with Lithium Metal 634

Keumi, T., Taniguchi, R., Kitajima, H.: 2-Acyloxypyridine/Trifluoroacetic Acid System as an Acylating Agent for Arenes 139

Kezdi, M., see Vlassa, M. 850

Khammungkhune, S., Sigler, G.: A Convenient Synthesis of Benzyloxycarbonyl-L-amino *Acid 4-Methylcoumaryl-7-amides 614

Khan, S., see Ghosh, C.K. 701

Khan, Z.H., see El-Abadelah, M.M. 146

Kiesel, Y., see Eckert, H. 947

Kikkawa, I., Yorifuji, T.: Convenient Synthesis of Alkyl Ketones from Carboxylic Esters 877

King, J.F., Aslam, M.: Alkanesulfonyl Chlorides from Alcohols via [2]Betylates (Alkyl-2-Ammonioethanesulfonates) 285

Kinoshita, M., see Yamauchi, K. 852

Kishi, K., see Ishii, F. 706

Kita, Y., see Tamura, Y. 483, 887

Kitajima, H., see Keumi, T. 139, 634

Kloosterman, D., see McCall, J.M. 123

Knapp, S., see Hughey, J.L. 489

Kobayashi, M., Valente, L.F., Negishi, E., Patterson, W., Silveira, A.: A Selective and Efficient Synthesis of (*E*)-4-Methyl-3-alken-1-ols via Zirconium-Catalyzed Carboalumination of Terminal Alkynes 1034

Kobayashi, T., Tsuruta, H.: Reductive Cleavage of 5,6-Dihydro-2*H*-pyran Derivatives; Facile Synthesis of *cis*-3-Hexenol 492

Kocor, M., Kroszczyński, W., Piertrzak, J.: Cyclopropanation of Steroids in the 1,2-Positions 742

Köster, R., see Dahlhoff, W.V. 935, 936

Kondratenko, N.V., Vechirko, E.P., Yagupolskii, L.M.: A Convenient Method for the Introduction of Trifluoromethyl Groups into Organic Compounds 932

Konya, S., see Nakagawa, I. 556

Korpela, T., Mäkelä, M.: Preparation and Properties of *O*-Amino-D-serine; Acid Hydrolysis of D-4-Amino-3-isoxazolidinone (D-Cycloserine) 997

Koshitani, J., see Ueno, Y. 313

Kotyński, A., see Kudzin, Z.H. 1028

Kovács, M., see Bésán, J. 883

Koveshnikova, G.M., see Merkushev, E.B. 486

Krasnec, L., see Devínsky, F. 303

Krause, J.G., see Gordon, M.S. 244

Krausz, F., see Sturtz, G. 289

Krayevsky, A.A., see Ozols, A.M. 557, 559

Krishna Rao, G.S., see Parameswara Reddy, M. . . . 815
see Sangaiah, R. 1018

Krogh, J.A., see Sosnovsky, G. 654

Kroszczyński, W., see Kocór, M. 742

Kubo, A., Nakai, T.: A Simple, General Method for the Conversion of 2-Indolinones into Indoles 365

Kudzin, Z.H., Kotyński, A.: Synthesis of *O,O*-Dialkyl 1-Aminoalkanephosphonates 1028

Kudzin, Z.H., Stec, W.J.: Phosphohomocysteine Derivatives . . . . . .1032 (erratum: 1091)

Kuila, D., see Jeganathan, S. 469

Kulagowski, J.J., Rees, C.W.: Improved Preparation of 2-Nitrodiphenylamines 215

Kulcsár, G., see Hideg, K. 911

Kulcsár, L., see Bésán, J. 883

Kulkarni, S.U., see Brown, H.C. 151

Kumar, A., Aggarwal, V., Ila, H., Junjappa, H.: A Novel and Convenient Synthesis of 2-Amino-4-(*N*-alkyl-*N*-arylaminc)-pyrimidines using Polarized Ketene *S,S*- and *S,N*-Acetals 748

Kumar, P., Mishra, H.D., Mukerjee, A.K.: Condensation of 2-Substituted 5-Oxo-4,5-dihydro-1,3-oxazoles with Imines and Their Corresponding Carbonyl Compounds 836

Kuroyama, Y., see Takahashi, S. 627

Kusuma, K., see Messinger, P. 565

Labeeuw, B., see Sturtz, G. 289

Lacko, I., see Devínsky, F. 303

LaMattina, J.L., Suleske, R.T.: Use of the Neber Rearrangement for the Synthesis of α-Amino Acetals 329

Lambert, G., see Duffley, R.P. 733

Lang, G., see Guy, A. 222

Lang, S.A., see Lin, Y. 119

Laszlo, P., see Cornelis, A. 849

La Torre, F., see Cacchi, S. 243

Laycock, D.E., see Alper, H. 799

Lee, S.K., see Shim, S.C. 116

Lemay, G., see Cannone, P. 301

Lepage, Y., see El Gendy, A.M. 898

see Mallouli, A. 689

Lesiak, J., Bouchu, M.N., Descotes, G.: Synthesis of New Macrocyclic Bis-Dithiocarbonates 240

Lesnikowski, Z.J., Stec, W.J., Zielinski, W.S.: Thymidine 3'-(2-Chlorophenyl)-phosphoranilidate as a Key Intermediate in the Synthesis of Tetrathymidylic Acid bearing Phosphoryl or Phosphorothioyl End Groups 397

Levy, A.B., Angelastro, R., Marinelli, E.R.: An Improved Synthesis of Trisubstituted Ethylenes via Organoboranes 945

Lex, L., see Hankovszky, H.O. 914

see Hideg, K. 911

Lidert, Z., Gronowitz, S.: Preparation of 2-Substituted Derivatives of Some α-Amino Acids 322

Lin, Y., Lang, S.A.: A New Synthesis of Diacylamines 119

Linneman-Mohr, M.A., see Gordon, M.S. 244

Liu, T., see Shinkai, I. 924

Liu, W.-L., see Cheng, Y.-S. 223

Lötjönen, S., Hynninen, P.H.: A Convenient Method for the Preparation of Chlorin e_6 and Thodin g_7 Trimethyl Esters 541

Lötjönen, S., see Hynninen, P.H. 539

Löwer, H., see Schill, G. 370

Logemann, E., see Schill, G. 370

Lombardo, L., Mander, L.N.: A One-Step Synthesis of Cyclic α-Diazoketones 368

Lombardo, L., Sondheimer, F.: Synthesis of Tetrakis[2-ethoxycarbonyl-*trans*-ethenyl]-ethene 950

Lončar, B., see Majerski, Z. 74

Lorenzo, A., Molina, P., Vilaplana, M.J.: Preparation of Benzyl Iodides from Benzylamines 853

Lubinoux, B., Coudert, G., Guillaumet, G.: Selective Demethylation of Aryl Methyl Ethers . . 638

Lure, L.F., see Gorbatenko, V.I. 112

Luzzio, F.A., see Guziec, F.S. 691

McCall, J.M., Kamdar, B.V., Kloosterman, D.: Cyanoimine Chemistry: New Routes to Pyrimidinones and Pyrimidinediones 123

Macchi, Y., see Ikeda, I. 650

Mäkelä, M., see Korpela, T. 997

Maeshima, T., see Yoshihara, M. 746

Magnus, P., Roy, G.: α-Lithiohexamethylphosphoric Triamide – Formation and Reaction with Carbonyl Compounds 575

Mahajan, J.R., de Araújo, H.C.: Synthesis of Exaltolide® (Pentadecanolide) and Thioexaltolide from Cyclododecanone . . . . . 64 (erratum: 580)

Mahajan, J.R., Resck, I.S.: Synthesis of 6-Alkyl-3,3-dimethyl-5-oxononanolides by Intramolecular Reverse Dieckmann Reaction 998

Maier, W.F., see Andrade, J.G. 802

Majerski, Z., Šarac-Arneri, R., Škare, D., Lončar, B.: A Facile Route to 2-Noradamantanone via 4-Protoadamantanone 74

Mallik, R., see Chatterjee, A. 715

Mallouli, A., see El Gendy, A.M. 898

Mallouli, A., Lepage, Y.: Convenient Syntheses of Naphthalene-, Anthracene-, and Naphthacene-2,3-dicarboxaldehydes 689

Manchand, P.S., Townsend, J.M., Belica, P.S., Wong, H.S.: A Convenient Synthesis of 3,5-Dimethoxy-4-methylbenzoic Acid 409

Mandal, A.K., see Brown, H.C. 153

Mander, L.N., see Lombardo, L. 368

Manescalchi, F., see Bongini, A. 143

Manners, G.D., see Jurd, L. 618

Manzocchi, A., see Santaniello, E. 563

Marchand, E., see Morel, G. 918

Marinelli, E.R., see Levy, A.B. 945

Marino, J.P., Abe, H.: The Regiospecific Synthesis of Substituted Cyclohex-2-enols from α,β-Epoxycyclohexanones 872

Marinoni, G., see Bernardi, R. 50

Markovski, L.N., see Romanenko, V.D. 823

Marolt, P., see Weiss, R. 225, 227

Martelli, S., see Cardellini, M. 886

Martynenko, Z., see Smith, K.M. 493

Maspero, F., see Clerici, M.G. 305

Mataka, S., Takahashi, K., Tashiro, M., Tsuda, Y.: Reaction of 3,4-Diaroyl-1,2,5-thia-(or -oxa)-diazoles and *o*-Dibenzoylbenzene with Mineral Acid Salts of Methylamines having an Electron-Withdrawing Group 842

Mathew, J., see Wilson, S.R. 625

Matsumura, H., see Imafuku, K. 331

Mayrhofer, R., Otto, H.H.: A Simple Preparation of 3-Benzylidene-2-azetidinones 247

Mazza, L.J., Guarna, A.: An Improved Synthesis of 1,3-Diphenyl-2-buten-1-ones (β-Methylchalcones) 41

Mehrotra, K.N., Singh, G.: New Synthetic Method for 1,3,4,5-Tetraaryl-2-thioxo- (or -oxo)-2,3-dihydroimidazoles 1001

Meidine, M.F., see Briggs, E.M. 295

Meléndez, E., see Cativiela, C. 901

Mergen, W.W., see Kantlehner, W. 460

Merkushev, E.B., Simakhina, N.D., Koveshnikova, G.M.: A New, Convenient Iodination Method of Aromatic Compounds 486

Meslin, J.C., Reliquet, A., Reliquet, F., Quiniou, H.: A New Approach to the "Cephem" System; Synthesis of 3-Acetyl-7,7-dimethyl-8-oxo-5-thia-1-azabicyclo[4.2.0]-2-octene 453

Messeguer, A., see Camps, F. 725, 727

Messinger, P., Kusuma, K.: Alkylierung der aktiven Methylen-Gruppe von Sulfonen mit Mannich-Basen 565

Mestres, R., Palomo, C.: A Facile and Improved Synthesis of Cyanoguanidines from Carbodiimides 755

Meth-Cohn, O., Narine, B.: The Preparation and Formylation of 2-Acetamidothiophenes 133

Metz, G., Schwenker, G.: Intramolecular Cyclocondensation of 4- and 5-Oxocarboxylic Acids to Five- and Six-Membered Ring Systems 394

Metzger, J., see Alsaidi, H. 921

see Julliard, M. 116

Midorikawa, H., see Kambe, S. 366, 839

Mikhailov, B.M., see Bubnov, Y.N. 902, 904

Mikołajczyk, M., Bałczewski, P., Grzejszczak, S.: Sulphenylation of Phosphonates. A Facile Synthesis of α-Phosphoryl Sulphides and *S,S*-Acetals of Oxomethanephosphonates . . . . 127 (erratum: 1090)

Mikołajczyk, M., see Drabowicz, J. 32

Mirek, J., Adamczyk, M., Mokrosz, M.: Synthesis with Unsaturated Nitriles; I. Selective Hydrolysis of 1-Amino-2,6,6-tricyano-1,3-cyclohexadienes to 2,6,6-Tricyano-2-cyclohexenones 296

Mirek, J., see Adamczyk, M. 916

Mishra, H.D., see Kumar, P. 836

Misiti, D., see Cacchi, S. 147, 243

Mitscher, L.A., see Veysoglu, T. 807

Mitzlaff, M., Warning, K., Rehling, H.: Eine einfache Herstellung von ω-Alkoxylactamen durch anodische Alkoxylierung 315

Miyagawa, K., see Mizuta, M. 721

Miyake, H., see Ono, N. 952

Miyashita, M., Yoshikoshi, A.: Facile and Highly Efficient Conjugate Addition of Benzeneselenol to α,β-Unsaturated Carbonyl Compounds 664

Miyashita, M., see Yanami, T. 407

Mizuno, A., Hamada, Y., Shioiri, T.: New Methods and Reagents in Organic Synthesis; 6. A Simple One-Pot Conversion of Primary Alcohols to Nitriles having One C-Atom more 1007

Mizuta, M., Katada, T., Itoh, E., Kato, S., Miyagawa, K.: A Convenient, High-Yield Preparation of Novel Unsymmetrical Bis[acyl] Disulfides via *N*-(Aroylthio)-succinimides 721

Mohajerani, B., see Alkhader, M.A. 381

Mokrosz, M., see Adamczyk, M. 916

Mokrosz, M., see Mirek, J. 296

Molina, P., see Alajarin, M. 844

see Arques, A. 702

see Lorenzo, A. 853

Mollov, N.M., see Haimova, M.A. 845

Momot, V.V., Samarai, L.I., Bodnarchuk, N.D.: An Unusual Hydrolysis of α,β-Dichloroethyl Isocyanates with the Formation of 1,3-Oxazetidinones 571

Morel, G., Marchand, E., Foucaud, A.: A New Use of the Tetrahydrofuran/Powdered Potassium Hydroxide System: Convenient α-Sulfenylation of Ketones and Preparation of Dialkyl Polysulfides 918

Moriya, T., Hagio, K., Yoneda, N.: A New, Facile Synthesis of 3-(1-Dialkylaminoalkyl)-1*H*-indoles 728

Motherwell, W.B., see Barton, D.H.R. 68

Moubarak, I., Vessière, R.: Preparation of 2,4,5-Trisubstituted Furans 52

Moustafa, A.H., see Fateen, A.K. 457

Mouzin, G., Cousse, H., Autin, J.M.: A New, Convenient Synthesis of Glafenine and Floctafenine 54

Müller, O., see Weiss, A. 1000

Muhr, W., see Foster, N.I. 572

Mukerjee, A.K., see Kumar, P. 836

Muraoka, M., see Fukada, N. 566

Murata, C., see Keumi, T. 634

Murphy, W.S., see Wattanasin, S. 647

Murray, R.E., Zweifel, G.: Preparation of Phenyl Cyanate and its Utilization for the Synthesis of α,β-Unsaturated Nitriles 150

Musiani, M.M., see Giumanini, A.G. 743

Nagendrappa, G.: Synthesis of 1-Trimethylsilylcycloalkenes from 1-Bromocycloalkenes by Wurtz-type Coupling 704

Naidu, M.S.R., see Reddy, C.D. 1004

Nakagawa, I., Konya, S., Ohtani, S., Hata, T.: A "Capping" Agent: P^1-*S*-Phenyl P^2-7-Methylguanosine-5′ Pyrophosphorothioate 556

Nakai, T., see Kubo, A. 365

Narang, S.C., see Olah, G.A. 221, 657, 659, 661

Narine, B., see Meth-Cohn, O. 133

Nasi, F., see Pinza, M. 55

Natale, N.R., see Zipkin, R.E. 1035

Negishi, E., see Kobayashi, M. 1034

Neumann, W.P., see Albert, H.J. 942

Newsom, J.G., see Reinecke, M.G. 327

Newton, R.F., see Batten, R.J. 234

Ney, P., see Boland, W. 1015

Niemer, T., see Ketcham, R. 869

Nishida, T., see Onishi, T. 651

Nishigaki, S., see Senga, K. 479

Nishio, T., Omote, Y.: Oxidative Desulfenylation of β-Arylthio-aldehydes and -ketones to α,β-Unsaturated Carbonyl Compounds 392

Nishio, T., Omote, Y.: The Substitution Reaction of 2-Alkylthio-1-alkenyl and 2-Alkylsulfinyl-1-alkenyl Ketones with Amines: Preparation of 2-Amino-1-alkenyl Ketones 390

Nishio, T., Omote, Y.: The Substitution Reaction of 2-Aralkylthio-1-alkenyl and 2-Alkylsulfinyl-1-alkenyl Ketones with Alkoxides; Preparation of 2-Alkoxy-1-alkenyl Ketones 1013

Nitta, H., see Wakisaka, M. 67

Nixon, W.J., Garland, J.T., DeWitt Blanton, C.: 2-Amino-3-cyanofurans as Precursors for Anthranilic Acid Derivatives 56

Noguchi, Y., see Furukawa, M. 937

Noire, P.D., Franck, R.W.: A Facile Synthesis of 5,7-Dimethoxy-1(*3H*)-isobenzofuranone (5,7-Dimethoxyphthalide) 882

Ognyanov, V.I., see Haimova, M.A. 845

Ogura, K., Ito, Y., Tsuchihashi, G.: New Method for Preparation of Methyl Aryldithioacetates and Arylthioacetamides 736

Ohishi, J.-I.: A New Cyclopropanation Method Mediated by Organosulfur Compounds 690

Ohkawara, T., see Furukawa, M. 937

Ohshiro, Y., see Agawa, T. 933

Ohta, A., see Watanabe, T. 39

Ohtani, S., see Nakagawa, I. 556

Ohtomi, M., see Akabori, S. 900

Oida, T., Tanimoto, S., Sugimoto, T., Okano, M.: A New Synthesis of 1,3-Diarylisobenzofurans . . . 131

Oishi, T., see Sakurai, A. 843

Okahara, M., see Ikeda, I. 650

Okamoto, T., see Endo, Y. 461

Okano, M., see Oida, T. 131

Okano, T., see Sasaki, T. 472

Okawara, M., see Ueno, Y. 1011

Okuno, Y., Ford, W.E., Calvin, M.: An Improved Synthesis of Surfactant Porphyrins 537

Olah, G.A., Arvanaghi, M., Prakash, G.K.S.: Synthetic Methods and Reactions; 79. Reductive Cleavage of Oximes with Vanadium(II) Chloride 220

Olah, G.A., Arvanaghi, M., Vankar, Y.D.: Synthetic Methods and Reactions; 87. Deoxygenation of Pyridine *N*-Oxides with Trimethyl-(ethyl)amine-Sulfur Dioxide Complexes 660

Olah, G.A., Arvanaghi, M., Vankar, Y.D., Prakash, G.K.S.: Synthetic Methods and Reactions; 89. Improved Transformation of Nitro Compounds into Carbonyl Compounds by Hydrogen Peroxide/Potassium Carbonate 662

Olah, G.A., Fung, A.P., Gupta, B.G.B., Narang, S.C.: Synthetic Methods and Reactions; 80. Deoxygenation of Sulfoxides with Cyanuric Chloride and Fluoride 221

Olah, G.A., Gupta, B.G.B.: Synthetic Methods and Reactions; 75. Facile Conversion of Nitro Compounds and Silyl Nitronates into Carbonyl Compounds by Ceric Ammonium Nitrate 44

Olah, G.A., Gupta, B.G.B., Fung, A.P.: Synthetic Methods and Reactions; 95. Ceric Ammonium Nitrate-Catalyzed Oxidative Cleavage of Alkyl and Silyl Ethers with Sodium Bromate 897

Olah, G.A., Narang, S.C., Fung, A.P., Gupta, B.G.B.: Synthetic Methods and Reactions; 82. Cyanuric Chloride, a Mild Dehydrating Agent in the Preparation of Nitriles from Amides 657

Olah, G.A., Narang, S.C., Garcia-Luna, A.: Synthetic Methods and Reactions; 83. Sulfuryl Chloride Fluoride: a Mild Dehydrating Agent in the Preparation of Nitriles from Aldoximes 659

Synthetic Methods and Reactions; 88. Sulfuryl Chloride Fluoride, a Convenient Reagent for the Preparation of Amides from Carboxylic Acids and Primary Amines Under Mild Conditions 661

Olah, G.A., Narang, S.C., Salem, G.F.: Synthetic Methods and Reactions; 78. Cleavage of Ethanediyl *S,S*-Acetals with Hydrochloric Acid/Hydrogen Peroxide 657

Synthetic Methods and Reactions; 84. Mild Cleavage of Ethanediyl *S,S*-Acetals with Trichloroisocyanuric Acid 659

Olah, G.A., Vankar, Y.D., Arvanaghi, M.: Synthetic Methods and Reactions; 77. Dimethyl Sulfoxide/Chlorosulfonyl Isocyanate: An Extremely Mild Reagent for the Oxidation of Alcohols to Carbonyl Compounds 141 (erratum: 1090)

Olah, G.A., Vankar, Y.D., Berrier, A.L.: Synthetic Methods and Reactions; 72. Mild Fragmentative *C*–*C* Bond Cleavage of α-Hydroxyketoximes with Trifluoromethanesulfonic Anhydride, Trifluoroacetic Anhydride, or Trifluoromethanesulfonyl Chloride 45

Oleksyszyn, J.: 1-*N*-Alkylaminoalkanephosphonic and 1-*N*-Alkylaminoalkyl-phenyl-phosphinic Acids 722

Oleksyszyn, J., Subotkowska, L.: Aminomethanephosphonic Acid and its Diphenyl Ester 906

Omar, M.T., see Basyouni, M.N. 115

Omote, Y., see Nishio, T. 390, 392, 1013

On, H.P., see Zweifel, G. 803

Onishi, T., Fujita, Y., Nishida, T.: Solvent-Assisted Oxy-Cope Rearrangement of Non-Conjugated Enynols, A New Efficient Synthesis of Pseudoionone and its Analogs 651

Ono, N., Miyake, H., Saito, T., Kaji, A.: A Convenient Synthesis of Sulfides, Formaldehyde, Dithioacetals, and Chloromethyl Sulfides 952

Ottenheijm, H.C.J., see Tijhuis, M.W. 890

Otto, H.H., see Mayrhofer, R. 247

Ozols, A.M., Azhayev, A.V., Dyatkina, N.B., Krayevsky, A.A.: Aminonucleosides and their Derivatives; VI. A New Synthesis of 1,2,5-Tri-*O*-acyl-3-azido-3-deoxy-β-D-ribofuranose 557

Ozols, A.M., Azhayev, A.V., Krayevsky, A., Ushakov, A.S., Gnuchev, N.V., Gottikh, B.P.: Aminonucleosides and their Derivatives; VII. Synthesis of 3′,5′-Dideoxy-3′,5′-diaminonucleosides 559

Palomo, C., see Mestres, R. 755

Palomo-Coll, A.L., see Diago-Meseguer, J. 547

Pan, H.L., Cole, C.A., Fletcher, T.L.: A Facile, Rapid Preparation of a Series of Cinnamyl Alcohols from 3-Phenylpropenes Using Selenium Dioxide 813

Parameswara Reddy, M., Krishna Rao, G.S.: One-Step Vilsmeier Route to Some 5-Aryl-3-methyl-2(*E*),4(*E*)-pentadienals and their Oxidation to Pentadienoic Acids 815

Paraskewas, S.: Chlorierung und Bromierung von Pyridin-Palladium(II)-chlorid-Komplexen 378

Parchue, R.R., see Gordon, M.S. 244

Patterson, W., see Kobayashi, M. 1034

Paulsen, H., Heiker, F.R., Feldmann, J., Heyns, K.: Direkte Synthese von ungesättigten Kohlenhydraten und Cycliten aus Oxiranen . . . . . 636 (erratum: 1091)

Pawlowski, G., Hanack, M.: A Convenient Synthesis of Octasubstituted Phthalocyanines 287

Pericás, M.A., see Camps, F. 725, 727

Perumal, P.T., Bhatt, M.V.: Oxidation of Halophenols and Highly Substituted Phenols with Lead(IV) Acetate 943

Pete, J.P., see Henin, F. 895

Peterson, P.E., see Ambasht, S. 318

Petragnani, N., Yonashiro, M.: The Reaction of Lithium α-Lithiocarboxylates (Dianions of Carboxylic Acids) or α-Lithiocarboxylic Esters (Ester Enolates) with α-Halocarboxylic Esters or Lithium α-Halocarboxylates 710

Pfaff, K., see Ahlbrecht, H. 413

Piancatelli, G., see D'Auria, M. 245

Pietrzak, B., see Adam, W. 820

Pietrzak, J., see Kocór, M. 742

Pifferi, G., see Pinza, M. 55

Pinza, M., Pifferi, G., Nasi, F.: A New Synthesis of 3-Oxazolin-5-ones (5-Oxo-2,5-dihydro-1,3-oxazoles) 55

Pochat, F.: 2,4-Diaminopyrimidines: 6-Substituted 5-Alkylthio (or Arylthio) Derivatives 379

Pogany, S.A., see Hauser, F.M. 814

Polanc, S., Stanovnik, B., Tišler, M.: Selective Deoxygenation of *N*-Oxides and Reduction of Nitro Compounds by Molybdenum(III) Species 129

Selective Reduction of Heterocyclic Azides and Hydrazino Compounds to Amines by Molybdenum(III) Species 830

Popp, F.D., see Veeraraghavan, S. 384

Praefcke, K., Weichsel, C.: Vereinfachte Synthese von 4-Methylphenylseleno- und erste Synthese von 4-Methylphenyltelluro-trimethylsilan 216

Prakash, C., see Ahluwalia, V.K. 48

Prakash, G.K.S., see Olah, G.A. 220, 662

Prasanna, S., see Hauser, F.M. 72, 621

Price, T.R., see Keller, T.M. 613

Puglia, G., see Casiraghi, G. 124

Queen, J., see Ambasht, S. 318

Quici, S., see Czech, B. 113

Quiniou, H., see Meslin, J.C. 453

Raab, W., see Ahlbrecht, H. 320

Radatus, B.K., Clarke, I.S.: An Improved Synthesis of Methyl 4,6-*O*-Benzylidene-2,3-dideoxy-α-D-*erythro*-hex-2-enopyranoside 47

Radüchel, B.: Inversion of Configuration of Secondary Alcohols, in Particular in the Steroid and Prostaglandin Series 292

Ramamohan Rao, B., Ahmed, K.: A One-Pot Synthesis of 4-Aryl-1*H*-[1,2,4]oxadiazino[4,5-*a*]-perimidines 155

Rambaud, M., see Villieras, J. 644

Ramirez-Muñoz, M., see Badet, B. 926

Ranganathan, D., Ranganathan, S., Rao, C.B., Kesavan, M.: Nitroethylene: A Novel Synthon for *N*-(2-Nitroethyl)-amino Compounds 884

Ranganathan, S., see Ranganathan, D. 884

Rao, A.S., see Dhekne, V.V. 58

Rao, C.B., see Ranganathan, D. 884

Rao, C.G., see Brown, H.C. 151

Ray, J.K., Sharma, S., Chatterjee, B.G.: Synthesis of 3-Methoxy-6,7-dihydro-5*H*-benzo-[6,7]cyclohepta[1,2-*b*]quinoline 326

Razdan, R.K., see Duffley, R.P. 733

Reamer, R., see Shinkai, I. 924

Reames, D.C., Hunt, D.A., Bradsher, C.K.: A One-Pot Synthesis of Dibenzosuberones via the Parham Cycliacylation Reaction 454

Rebollo, H., see Adam, W. 820

Reddy, C.D., Reddy, S.S., Naidu, M.S.R.: Synthesis of 2-Phenoxy-2,2′-(3*H*,3′*H*)-spiro-bi[1,3,2-benzoxazaphosphole] 1004

Reddy, S.S., see Reddy, C.D. 1004

Rees, C.W., see Kulagowski, J.J. 215

Reese, C.B., see Kemal, Ö. 1025

Reetz, M.T., Hüttenhain, S.H.: α-Cumylation of Ketones 941

Regen, S.L., see Quici, S. 113

Regondi, V., see Degani, I. 375

Rehling, H., see Mitzlaff, M. 315

Reichardt, C., see Dersch, R. 940

Reichardt, C., Rust, C.: Synthesen mit aliphatischen Dialdehyden; XXVIII. Herstellung von Mono-trimethylsilylethern von Malondialdehyden 232

Reiffenrath, V., see Wolff, T. 847

Reinecke, M.G., Newsom, J.G., Almqvist, K.A.: An Improved Synthesis of Thiophene-2,3-dicarboxylic Acid by Sequential Carboxylation . . . 327

Reliquet, A., see Meslin, J.C. 453

Reliquet, F., see Meslin, J.C. 453

Resck, I.S., see Mahajan, J.R. 998

Rhee, R.P., see Hauser, F.M. 72

Ricart, G., see Barbry, D. 387

Ricart, S., see Camps, F. 725

Richard, H., see Chow, Y.L. 818

Ried, W., Dietschmann, H., Erle, H.E.: Eine einfache Synthese von Carbamimidoyl-halogeniden (Haloformamidinen) und von (dazu vinylogen) 2-Cyano-3,3-diaminopropenimidoyl-halogeniden . 619

Romanenko, V.D., Tovstenko, V.I., Markovski, L.N.: Applications of Iodotrimethylsilane for the Synthesis of Iodophosphines, Iodophosphoranes, and Iodomethylphosphine Oxides 823

Rossi, P., see Giumanini, A.G. 743

Rowe, J.E.: The Preparation of Aryl Imidates and Diaroylamides by Phase-Transfer Catalysis . . 114

Roy, G., see Magnus, P. 575

Rudorf, W.D., Augustin, M.: Reaktionen von 2-Benzoyl-3,3-bis[methylthio]-acrylnitril mit *CH*-aciden Verbindungen 1022

Russ, W.K., see Serio Duggan, A.J. 573

Russell, G.A., see Hershberger, J. 475

Rust, C., see Reichardt, C. 232

Saito, K., see Kambe, S. 366, 839

Saito, T., see Ono, N. 952

Sakai, K., see Tamura, Y. 483, 887

Sakaino, Y., see Chow, Y.L. 818

Sakaki, K., see Yoshihara, M. 746

Sakamoto, Y., see Akabori, S. 900

Sakurai, A., Hayashi, T., Oishi, T.: Conversion of Dithiocarbamates to Bromides via *S*-Alkylation 843

Sakurai, A., see Kambe, S. 366, 839

Salem, G.F., see Olah, G.A. 657, 659

Samarai, L.I., see Momot, V.V. 571

Sanders, M.E., see Burgstahler, A.W. 400

Sangaiah, R., Krishna Rao, G.S.: Oxidation of Acetoxy-(alkyl)-arenes and Alkoxy-(alkyl)-arenes with Benzyltriethylammonium Permanganate; Convenient Syntheses of Some Natural Products 1018

Sano, H., see Ueno, Y. 1011

Santaniello, E., Ferraboschi, P., Sozzani, P.: Efficient and Selective Oxidation of Alcohols by Potassium Dichromate Solutions . . . 646

Santaniello, E., Manzocchi, A., Farachi, C.: Tetrabutylammonium Periodate; A Selective and Versatile Oxidant for Organic Substrates . . . 563

Šarac-Arneri, R., see Majerski, Z. 74

Sartori, G., see Bigi, F. 724

see Casiraghi, G. 124

Sasaki, T., Eguchi, S., Okano, T.: Synthesis of Adamantane Derivatives; 48. Synthesis of Some Novel 1,2-Fused Adamantane Azaheterocycles via 2-Oxoadamant-1-yl Isocyanate . . 472 (erratum: 1090)

Sasaki, Y., see Keumi, T. 634

Sato, R., Goto, T., Takikawa, Y., Takizawa, S.: Convenient Synthesis of Aromatic Thiosulfonates from Aromatic Sulfinates with Elemental Sulfur in Amines 615

Scettri, A., see D'Auria, M. 245

Schantl, J., Gstach, H.: Eine effiziente Synthese von 4-Cyanopyridin 694

Schaumann, E., Wriede, U., Ehlers, J.: Tetraethylammonium Hydrogen Sulfide: A Convenient Reagent for Thiolation of 1,1-Dichloroalkenes 907

Schaumann, E., see Ketcham, R. 869

Scheiber, L., see Vilsmaier, E. 465

Schill, G., Logemann, E., Löwer, H., Fritz, H.: Reaktionen von 3,6-Dimethyl-4,5-bis[dialkylamino]-1,2-benzochinonen mit Chlor und *t*-Butyl-hypochlorit 370

Schleyer, P.v.R., see Andrade, J.G. 802

Schmidt, H.W., Zacharias, G., Junek, H.: Synthesen mit Nitrilen; 59. Ein einfacher Weg zu 2-Amino-3,4,5-tricyanopyridinen 471

Schugar, H., see Hughey, J.L. 489

Schwenker, G., see Metz, G. 394

Sekiya, K., see Watanabe, T. 39

Selvaraj, S., see Balasubramanian, K.K. 29, 138

Senga, K., Furukawa, K., Nishigaki, S.: Synthesis of Pyrido[3,2-*d*]pyrimidines by Intramolecular Cycloaddition of Azahexatrienes 479

Senning, A.: Eine milde Sulfenylierungsmethode für aktive Methylen-Verbindungen 412

Serio Duggan, A.J., Grabowski, E.J.J., Russ, W.K.: Phase-Transfer Mediated Heteroaromatic Nucleophilic Substitution: Introduction of a β-Adrenergic Blocking Moiety 573

Serra-Zanetti, F., see Attanasi, O. 314

Seyden-Penne, J., see Artaud, I. 34

Shams, N.A., see Fateen, A.K. 457

see Ismail, M.F. 410

Sharma, S., see Ray, J.K. 326

Shea, C.M., see Suginome, H. 229

Shibuya, S., see Kano, S. 741

Shim, S.C., Lee, S.K.: Synthesis of 1,4,5,8-Tetraazaphenanthrene 116

Shinkai, I., Liu, T., Reamer, R., Sletzinger, M.: Trimethylsilyl as a Sulfur-Protecting Group; A New Convenient Preparation of *N*-Protected 2-Aminoethanethiols 924

Shioiri, T., see Asai, T. 811

see Mizuno, A. 1007

Shiraki, H., see Ueno, Y. 313

Shudo, K., see Endo, Y. 461

Sigler, G., see Khammungkhune, S. 614

Silveira, A., see Kobayashi, M. 1034

Simakhina, N.D., see Merkushev, E.B. 486

Simchen, G., see Hergott, H.H. 626

Singh, G., see Mehrotra, K.N. 1001

Singh, H., Gandhi, C.S., Bal, M.S.: Synthesis of 1-(Cyanomethylene)-1,2,3,4-tetrahydroisoquinoline via Sulphur Extrusion and De-ethoxycarbonylation 1020

Sinnreich, J.: Chemistry of Succinylsuccinic Acid Derivatives; VI. A Specific Synthesis of *p*-Phenylenediamine 578

Sisti, M., see Bernasconi, S. 365

Škare, D., see Majerski, Z. 74

Sletzinger, M., see Shinkai, I. 924

Slusarska, E., Zwierzak, A.: Phase-Transfer-Catalysed *N*-Alkylation of Diphenylphosphinamide and Diphenylphosphinanilide with Secondary Alkyl Bromides 717

Small, P.W., see Coyle, J.D. 403

Smalley, R.K., see Alkhader, M.A. 381

Smith, K.M., Craig, G.W., Eivazi, F., Martynenko, Z.: Convenient Synthesis of *t*-Butyl Pyrrole-2-carboxylates from 2-Methylpyrroles 493

Smoczkiewicz, M.A., Jasiczak, J.: Organic Compounds with Reversible Red-Ox Potential as Oxidizers in Steroid Chemistry; I. Tetrazolium Salts . . . . . 739 (erratum: 1091)

Soderlund, D.M., see Camps, F. 725

Sohár, P., see Szilágyi, G. 698

Soler, A., see Arques, A. 702

Sondheimer, F., see Butina, D. 543

see Lombardo, L. 950

Sonnet, P.E.: A Convenient Stereospecific Reduction of Epoxides and Iodohydrins to Alkenes 828

Sonogashira, K., see Takahashi, S. 627

Sosnovsky, G., Krogh, J.A.: A New Method for the Preparation of Aliphatic Hydroxamic Acids; Reaction of Primary Nitroalkanes with Selenium Dioxide in the Presence of Triethylamine 654

Sozzani, P., see Santaniello, E. 646

Spatola, A.F., see Anwer, M.K. 929

Srinivasan, M., see Jeganathan, S. 469, 1021

Stahl, I., Gosselck, J.: Neue ergiebige Synthese von β-Hydroxyketonen aus 1,3-Dithianen via Grignard-Reaktion 561

Stamos, I.K.: A Convenient Preparation of Ethyl 5,6-Dimethoxyindole-3-acetate 663

Stang, P.J., Treptow, W.: Single-Step Improved Synthesis of Primary and Other Vinyl Trifluoromethanesulfonates 283

Stanovnik, B., see Polanc, S. 129, 830

Stec, W.J., see Kudzin, Z.H. 1032

see Lesnikowski, Z.J. 397

Steenson, B.E., see Happer, D.A.R. 806

Steglich, W., Wegmann, H.: Überführung von α-Aminosäuren in α-Vinylaminosäuren 481

Stetter, H., Dämbkes, G.: Über die präparative Nutzung der 1,3-Thiazoliumsalz-katalysierten Acyloin- und Benzoin-Bildung; III. Eine neue Methode zur Herstellung von substituierten Enol-trimethylsilyl-ethern des 1,2-Cyclopentandions 309

Stock, J.A., see Davies, L.C. 75

Sturtz, G., Yaouanc, J.J., Krausz, F., Labeeuw, B.: Lactonization at the 17β-Position of Steroids . . . 289

Subotkowska, L., see Oleksyszyn, J. 906

Sugimoto, T., see Oida, T. 131

Sugino, E., see Kano, S. 695, 741

Suginome, H., Shea, C.M.: Synthesis of α-Hydroxy Lactams by Photorearrangement of Cyclic α-Hydroxy Ketone Oximes 229

Suleske, R.T., see LaMattina, J.L. 329

Sumio, M., see Imafuku, K. 331

Sun, J.-H., see Taylor, E.C. 801

Swayze, J.K., see Veysoglu, T. 807

Szeja, W.: The Phase-Transfer Catalysed Synthesis of Esters of Carboxylic Acids 402

Szilágyi, G., Sohár, P., Wamhoff, H.: Heterocyclische β-Enaminoester, 25. Zur thermischen Reaktion von Maleinsäure-anhydrid mit 2-Amino-3-alkoxycarbonyl-4,5-dihydrofuranen 698

Taffer, I.M., see Zipkin, R.E. 1035

Tajima, T., see Kashima, C. 880

Takahashi, K., see Akabori, S. 900

see Mataka, S. 842

Takahashi, S., Kuroyama, Y., Sonogashira, K., Hagihara, N.: A Convenient Synthesis of Ethynylarenes and Diethynylarenes 627

Takajo, T., Kambe, S.: A Facile Synthesis of Perhydropyrimidines through the Michael Addition of Some Active Methylene Compounds to *N,N'*-Dibenzylidenephenylmethanediamines and some Related Compounds . . . . . 833 (erratum: 1091)

Takeshima, T., see Fukada, N. 566

Takikawa, Y., see Sato, R. 615

Takizawa, S., see Sato, R. 615

Tamura, Y., Yoshimoto, Y., Sakai, K., Haruta, J., Kita, Y.: A Mild and Efficient Method for the Semmler-Wolff Aromatization; A Versatile Route to *m*-Alkoxy-, *m*-Halogeno-, and *m*-Thiocyanato-acetanilides 887

Tamura, Y., Yoshimoto, Y., Sakai, K., Kita, Y.: A New, Convenient Method for Semmler-Wolff Aromatization 483

Tanaka, Y., see Kano, S. 695, 741

see Watanabe, T. 39

Taniguchi, R., see Keumi, T. 139

Tanimoto, S., see Oida, T. 131

Tappe, H.: Ein einfacher Weg zu Sulfonsäure-estern aromatischer Amino-hydroxy-Verbindungen unter Anwendung der Phasentransfer-Katalyse 577

Tashiro, M., Yoshita, H., Fukata, G.: Selective Preparations; 27. A Convenient Preparation of 1-Hydroxydibenzofuran from 2-Bromo-4,6-di-*t*-butylphenol 495

Tashiro, M., see Mataka, S. 842

Taylor, E.C., Sun, J.-H.: A New Synthesis of Aminomalononitrile Tosylate 801

Taylor, R.J.K., see Batten, R.J. 234, 910

Taylor, W.G.: A Convenient Synthesis of Ethyl (+)-*cis,trans*-3-(2,2-Dichlorovinyl)-2,2-dimethylcyclopropanecarboxylate by the Wittig Reaction 554

Tijhuis, M.W., Herscheid, J.D.M., Ottenheijm, H.C.J.: A Practical Synthesis of *N*-Hydroxy-α-amino Acid Derivatives 890

Tišler, M., see Polanc, S. 129, 830

Torres, T., see Fariña, F. 753

Tovstenko, V.I., see Romanenko, V.D. 823

Townsend, J.M., see Manchand, P.S. 409

Treptow, W., see Stang, P.J. 283

Tröger, W., see Vilsmaier, E. 463, 466

Tsuchihashi, G., see Ogura, K. 736

Tsuda, Y., see Mataka, S. 842

Tsuruta, H., see Kobayashi, T. 492

Tsyban, A.V., see Bubnov, Y.N. 902, 904

Ueno, Y., Sano, H., Okawara, M.: A New Method for the 1,3-Hydroxy-Transposition in Allylic Alcohols via Allylic Stannanes 1011

Ueno, Y., Shiraki, H., Koshitani, J., Yoshida, T.: The Photochemical Reaction of 5*H*-Benzo-[*a*]phenothiazin-5-ones with Aldehydes 313

Uliss, D.B., see Duffley, R.P. 733

Ushakov, A.S., see Ozols, A.M. 559

Valente, L.F., see Kobayashi, M. 1034

Van den Bril, M., Fuks, R.: Amidinoethylation – A New Reaction; II. The Amidinoethylation of Active Methylene Compounds; A Facile Synthesis of 3,3-Disubstituted 1,5-Pentanedicarboxamidines 893

van den Bril, M., see Fuks, R. 121

Vankar, Y.D., see Olah, G.A. 45, 141, 660, 662

Van Leusen, A.M., see van Leusen, D. 325

van Leusen, D., van Leusen, A.M.: A Simple Preparation of Cyclobutanone 325

van Noort, P.C.M., see Cerfontain, H. 490

Vaughan, K., see Hinman, C. 719

Vechirko, E.P., see Kondratenko, N.V. 932

Veeraraghavan, S., Popp, F.D.: Reissert Compound Studies; XXXIII. The Synthesis of Ellipticine and Quinine Reissert Compounds 384

Veliev, M.G., Guseinov, M.M.: An Improved Synthesis of Propynal 461

Venkataramani, P.S., see Balasubramanian, K.K. . . 29

Vernin, G., see Julliard, M. 116

Vessière, R., see Gelas-Mialhe, Y. 1005

see Moubarak, I. 52

Veysoglu, T., Mitscher, L.A., Swayze, J.K.: A Convenient Method for the Control of Selective Ozonizations of Olefins 807

Vilaplana, M.J., see Lorenzo, A. 853

Villieras, J., Rambaud, M.: Synthesis of α-Monohalo- and α,α-Dihaloaldehydes from Carbenoids 644

Vilsmaier, E., Scheiber, L.: Enaminosulfoniumsalze; 6. Eine einfache Synthese für Cyanomorpholinobicyclo[n.1.0]alkane 465

Vilsmaier, E., Tröger, W.: Enaminosulfoniumsalze; 5. Eine einfache Synthese für 6-Alkoxy-6-aminobicyclo[3.1.0]hexane 463

Enaminosulfoniumsalze; 7. Eine Synthese für α-Aminoacetale 466

Viout, P., see Artaud, I. 34

Vismara, E., see Citterio, A. 291, 751

Vlassa, M., Kezdi, M., Goia, I.: Application of Phase-Transfer Catalysis in the Acridine Series; I. *S*-Alkylation and *S*-Acylation of Thioacridone and some Halogenated Thioacridone Derivatives 850

Vollhardt, K.P.C., see Funk, R.L. 118

Wakisaka, M., Hatanaka, M., Nitta, H., Hatamura, M., Ishimaru, T.: The Reduction of Sulfoxides with Phosphorus(V) Chloride/1-Morpholino-1-cyclohexene 67

Wamhoff, H., see Szilágyi, G. 698

Warning, K., see Mitzlaff, M. 315

Watanabe, T., Tanaka, Y., Sekiya, K., Akita, Y., Ohta, A.: A Convenient Synthesis of Methylamino- and Dimethylamino-Substituted Aromatic Compounds 39

Wattanasin, S., Murphy, W.S.: An Improved Procedure for the Preparation of Chalcones and Related Enones 647

Wegmann, H., see Steglich, W. 481

Weichsel, C., see Praefcke, K. 216

Weinreb, S.M., see Hauser, F.M. 72

Weiss, A., Winkler, B., Müller, O.: Modifizierung der Nucleotid-Base von Vitamin B_{12}: Umwandlung von 5,6-Dimethylbenzimidazolcobamid in 2-Amino-5,6-dimethyl-benzimidazolcobamid 1000

Weiss, R., Marolt, P.: Funktionelle Cyclo-C_3-Derivate; IX. Kombinierte Redox- und Metathesis-Prozesse im System Tetrahalogenocyclopropen/Antimontrihalogenid/Diorganyldichalcogenid 225

Funktionelle Cyclo-C_3-Derivate; X. Rationelle Synthese von organylchalcogeno-substituierten Cyclopropenylium-Systemen 227

Will, W., see Anders, E. 485

Williams, J.R., Caggiano, T.J.: Synthesis of 1,4-Cyclohexanediones by Photocycloaddition . 1024

Willis, B.J., see Britten-Kelly, M. 27

Wilson, S.R., Mathew, J.: *in situ* Alkylation of 2-Formyl-1,3-dithiane 625

Winkler, B., see Weiss, A. 1000

Winwood, D., see Katritzky, A.R. 800

Wolff, T., Reiffenrath, V.: Synthesis of 2-Naphthyl Vinyl Ethers 847

Wollenberg, R.H., Goldstein, J.E.: Ring Annulation by Intramolecular Nitrile Oxide Cycloaddition 757

Wong, H.S., see Manchand, P.S. 409

Wriede, U., see Schaumann, E. 907

Yagupolskii, L.M., see Kondratenko, N.V. 932

Yamauchi, K., Hisanaga, Y., Kinoshita, M.: Trimethylsulfonium Fluoride and *n*-Butyldimethylsulfonium Fluoride: New Methylating Agents for Nucleosides and Related Compounds 852

Yanami, T., Ballatore, A., Miyashita, M., Kato, M., Yoshikoshi, A.: Reaction of 2-Substituted 1,3-Dicarbonyl Compounds with Nitroalkenes . . . 407

Yaouanc, J.J., see Sturtz, G. 289

Yonashiro, M., see Petragnani, N. 710

Yoneda, N., see Moriya, T. 728

Yorifuji, T., see Kikkawa, I. 877

Yoshida, T., see Ueno, Y. 313

Yoshihara, M., Eda, T., Sakaki, K., Maeshima, T.: Conversion of Alcohols to Alkyl Halides using Iminium Salts 746

Yoshikoshi, A., see Miyashita, M. 664

see Yanami, T. 407

Yoshimoto, Y., see Tamura, Y. 483, 887

Yoshita, H., see Tashiro, M. 495

Zacharias, G., see Schmidt, H.W. 471

Zahler, R., see Bilyard, K.G. 389

Zapf, L., see Andrade, J.G. 802

Zieliński, W.: A Simple Preparation of 1,3-Dimethylisoquinoline and its Derivatives 70

Zielinski, W.S., see Lesnikowski, Z.J. 397

Zipkin, R.E., Natale, N.R., Taffer, I.M., Hutchins, R.O.: An Efficient and Mild Method for the Dehydrogenation of Spiroenones to Spirodienones via Organoselenium Reagents . . 1035

Zlota, A., see Balaban, A.T. 136

Zoltewicz, J.A.: Facile Nucleophilic Substitution Reactions of 1′-Methylthiaminium Salts 218

Zoltewicz, J.A., Baugh, T.D.: An Improved Synthesis of 1′-Methylthiaminium Salts 217

Zugaza-Bilbao, A., see Diago-Meseguer, J. 547

Zweifel, G., On, H.P.: A Convenient Route to (*E*)-1-Alkenylsilanes via Isomerization of (*Z*)-1-Alkenylsilanes 803

Zweifel, G., see Murray, R.E. 150

Zwierzak, A., see Slusarska, E. 717

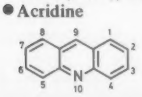
COMPOUND INDEX

SYNTHESIS 1980

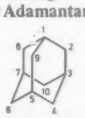
Reaction Index p. 1080
Index of Special Reagents p. 1086
Index of Apparatus, Laboratory Techniques etc. p. 1089

● Acenaphthylene

- Acenaphthylenes
- Anellation Reactions 175
- Acenaphthenes
- Ring Synthesis 783, 1091
● Acetals and Hetero Analogs
- *O,N*-Acetals
- Synthesis 463
- *O,O*-Acetals
- Synthesis 271, 405, 950
- Cleavage 5, 80 (5672)
- Reactions 956 (5928)
- *S,S*-Acetals
- Synthesis 499 (5807), 734, 753, 866
- Reactions 499 (5807)
- *Se,Se*-Acetals
- Synthesis 1044 (5960)
- Alkanal *O,O*-Acetals
- Halogenation 143
- Alkanal *S,S*-Acetals
- Dehydrogenation 587 (5842)
- Alkenedial Bis[*O,O*-acetals]
- Synthesis 593, 595, 596
- α-Aminoacetals
- Synthesis 329, 467, 889
- α-Arylseleno-*O,O*-acetals
- Synthesis and Reactions 342 (5770)
- Cyclic *O,O*-Acetals
- Reactions 340 (5763)
- Cyclic *S,S*-Acetals
- Cleavage 657, 659
- Dichloropropanedial Bis-acetals
- Synthesis 940
- Formaldehyde *O,O*-Acetals
- Synthesis 670 (5858)
- Formaldehyde *O,S*-Acetals
- Synthesis 959 (5938)
- Formaldehyde *S,S*-Acetals
- Synthesis 952
- α-Hydroxy *S,S*-Acetals
- Synthesis and Reactions 499 (5807)
- α-Oxo *S,S*-Acetals
- Synthesis 919
- 2-Oxo-1,1,3,3-tetraarylthioalkanes
- Synthesis 919
- α,β-Unsaturated *O,O*-Acetals
- Synthesis 764 (5892)
- Reactions 337 (5756)
- β,γ-Unsaturated *S,S*-Acetals
- Synthesis 338 (5758)
● Acetylenes
see: Alkynes
● *CH*-Acidic Compounds
- Reactions 27, 256 (5729), 421 (5792), 504 (5819), 833, 972, 973, 974
● Acridine



- 9-Acylthio- and 9-Alkylthioacridines
- Synthesis 850
- Acridanones
- Ring Synthesis 515
- Thioacridanones
- Alkylation and Acylation 850
● Acridizine
see: Benzo[*b*]quinolizine
● Acyl-Anion Equivalents
- Acyloins as Acylanion Equivalents 36
- 1-Lithio-1-alkenyl Sulfides 587 (5841)
- 2-Lithio-1,3-dithians 502 (5815)
- 2-Siloxyalkanenitriles 863
● Acylium Salts
- Synthesis and Reactions 352
● Acyloins
- Synthesis 37
- Reactions 36
- Reduction 333 (5742)
● Acyl Sulfenates
- Cleavage 12
● Adamantanes



- Ring Synthesis 346
- Anellation Reactions 472
- Nitration 355
- Functionally Substituted Adamantanes
- Synthesis and Reactions 473
- *N*-Heterocyclic-fused Adamantanes
- Synthesis 472
● Adriamycin Derivatives
- Synthesis 195
● Alcohols (including *O*-Acyl and *O*-Sulfonyl Derivatives)
- Synthesis 84 (5683), 154
- Etherification 79 (5668), 670 (5858) (5859)
- Indirect Reduction 1040 (5947)
- OH/Hal Exchange 667 (5850), 746
- Replacement of the Hydroxy Group by Other Functional Groups 285
- *O*-Silylation 234, 257 (5731)
- 3-Acyloxy-1-alken-4-ynes
- Alkylation 77 (5661)
- 2,3-Alkadienols
- Synthesis 419 (5786)
- 3,4-Alkadienols
- Synthesis 419 (5786)
- Alkanols
- Reactions 670 (5858), 865
- 2-Alkenols (Allyl Alcohols)
- Synthesis 422 (5794), 668 (5852), 813, 816, 1011
- Dehydration 668 (5853)
- Hydroxy-Group 1,3-Transposition 668 (5852), 1011
- Oxidation 157 (5685), 692
- *O*-Silylation 257 (5732)
- 3-Alkenols
- Synthesis 492, 584 (5832) (5833), 671 (5861), 1034
- 4-Alkenols
- Synthesis 1015
- 6-Alkenols
- Synthesis 1016
- 3-Alkoxy-2-aminoalkanols
- Synthesis 586 (5838)
- 2-Alkynols
- Synthesis 672 (5864)
- Oxidation 461
- Reduction 259 (5738)
- 3-Alkynols
- Synthesis 672 (5864)
- 4-Alkynols
- Synthesis 1046 (5968)
- 2-Aminoalkanols
- Synthesis 859 (5918), 862
- Cyclization Reactions 63
- 3-Aminoalkanols
- Synthesis 859 (5918)
- Cyclization Reactions 63
- 4-Amino-2,4-alkadienols
- Synthesis 601
- *o*-Aminobenzhydrols
- Synthesis 956 (5927)
- 2-Arylalkanols
- Synthesis 734
- 3-Arylalkanols
- Synthesis 734
- Arylethynylcarbinols
- Synthesis 422 (5793)
- Benzyl Alcohols
- Synthesis 477, 734
- Cyclization Reactions 882
- Oxidation 141, 157 (5684), 254 (5722), 734
- Cinnamyl Alcohols
- Synthesis 813
- Cyclopropylcarbinols
- Reactions 673 (5865)
- 2,2-Dihaloalkanols
- Synthesis 361
- 3-(2,6-Dioxocyclohexyl)-propanols
- Synthesis and Reactions 998
- Exomethylenebicycloalkanols
- Synthesis 498 (5804)
- Furylcarbinols
- Synthesis and Reactions 136
- 2-Haloalkanols
- Synthesis 250 (5712)
- 3-Halo-2-alkenols
- Synthesis and Cyclization Reactions 259 (5738)
- 2-(*o*-Haloaryl)-alkanols
- Cyclization Reactions 344 (5775)
- 3-(*o*-Haloaryl)-alkanols
- Cyclization Reactions 344 (5775)
- *o*-Halobenzyl Alcohols
- Cyclization Reactions 344 (5775)
- 4-Hydroxy-1-alken-5-ynes
- Synthesis and Rearrangement 652
- 3-Hydroxycyclohexenes
- Synthesis 872
- Long-Chain ω-Aminoalcohols
- Synthesis 818
- 2-Mercaptoalkanols and *S*-Derivatives
- Synthesis and Reactions 667 (5849)
- 3-Mercaptoalkanols
- Synthesis 910
- 2-Methylenealkanols

- Synthesis 640
- **Polyfluoroalkanols**
- Synthesis 360
- **Primary Alcohols**
- Synthesis 456, 696, 762 (5887), 912
- Oxidation 141, 157 (5685), 223, 581 (5822), 646, 691, 849
- Reactions 1007
- **Secondary Alcohols**
- Synthesis 50, 249 (5708), 672 (5863), 760 (5882), 855 (5905)
- Inversion of Configuration 292
- Oxidation 141, 157 (5685), 223, 581 (5822), 646, 691, 849
- **2-Silylalkanols**
- Synthesis 859 (5918)
- **2-Silyl-2-alkenols**
- Synthesis 80 (5671)
- **3-Silyl-2-alkenols**
- Synthesis and Reactions 675 (5871)
- **Silylethynylcarbinols**
- Synthesis and Reactions 422 (5793)
- **2,2,2-Trihaloethanols**
- Synthesis 360
- **Trimethylsilylmethanol**
- Synthesis and *O*-Sulfonylation 318

● **Alcohols, Reactive Derivatives**

- **2-Alkoxy-1,3-benzoxazoles**
- Reactions 675 (5872)

● **Aldehydes**

- Synthesis 44, 45, 142, 157 (5685), 223, 417 (5778), 564, 581 (5822), 662, 691, 761 (5883), 807, 912, 1043 (5958)
- Addition, Condensation, Substitution 160 (5695), 161 (5696), 424 (5798), 490, 582 (5827), 584 (5832) (5833), 585 (5835), 836, 859 (5919), 861, 865
- 1-Bromination 581 (5824)
- Conversion into Nitriles 703, 1006
- Cyclization Reactions 55, 331, 762 (5886), 870
- Reduction 157 (5686)
- **2-Acylcyclopropanecarboxaldehydes**
- Synthesis 762 (5888)
- **2,4-Alkadienals**
- Synthesis 423 (5797), 593, 816
- Oxidation 816
- **1,4-Alkadien-6-ynals**
- Synthesis 593
- **Alkanals**
- Synthesis 81 (5674), 151, 499 (5807), 766 (5897), 856 (5908)
- Arylsulfenylation 500 (5808)
- Cyclization Reactions 724
- Halogenation 143, 500 (5808)
- Reactions 723, 855 (5905)
- Reduction 855 (5905)
- **2,2-Alkanediyldithio-4-alkenals**
- Synthesis 625
- **2-Alkenals**
- Synthesis 157 (5685), 161 (5698), 334 (5745), 336 (5752), 392, 423 (5797), 646, 764 (5892)
- Arylselenylation 664
- Conversion into Alkanoic Esters 340 (5765)
- Cyclization Reactions 198, 814, 998
- Cyclopropanation 762 (5888)
- Reactions 81 (5674), 291, 856 (5910), 1006, 1046 (5970)
- Sulfenylation 503 (5817)
- **2-Alkynals**
- Synthesis 461
- Cyclization Reactions 183, 188
- Reductive Alkylation 334 (5745)
- **2-Aminoalkanals**
- Synthesis 162 (5966), 958 (5932)
- **5-Amino-2,4-pentadienals**
- Synthesis and Reactions 600 (review)
- **Aromatic Aldehydes**
- Synthesis 126, 254 (5722), 351, 420 (5787), 646, 734, 765 (5890), 849, 909
- Cyclization Reactions 366
- Derivatization 162 (5703)
- Reactions 79 (5669), 255 (5727), 424 (5799), 855 (5905), 1045 (5965)
- Reduction 855 (5905)
- **3-Arylalkanals**
- Synthesis 291
- **3-Aryl-2-alkenals (Cinnamaldehydes etc.)**
- Synthesis 816
- Reactions 1045 (5965)
- **Arylglyoxals**
- Cyclization Reactions 238
- Reactions 844
- **α-Branched Alkanals**
- Synthesis 499 (5806), 856 (5908)
- **Cycloalkanecarboxaldehydes**
- Synthesis 417 (5780), 856 (5908)
- **Cycloalkene-1-carboxaldehydes**
- Reductive Alkylation 417 (5780)
- **Cyclopropanecarboxaldehydes**
- Synthesis 554
- **5,5-Dialkoxy-2-alkenals**
- Synthesis 594
- **2,2-Dihaloalkanals**
- Synthesis 644
- **3-(2,6-Dioxocyclohexyl)-propanals**
- Synthesis and Cyclization Reactions 998
- **2,3-Disiloxy-2-alkenals**
- Synthesis 233
- **Enolizable Aldehydes**
- *O*-Acylation 83 (5679)
- α-Alkylation 499 (5806)
- Indirect α-Alkylation and α-Alkylidenation 336 (5752)
- *O*-Sulfonylation 283
- **2-Fluoroalkanals**
- Synthesis 419 (5784)
- **Formaldehyde**
- Cyclization Reactions 492, 500 (5810)
- **3-Formylchromones**
- Reactions 701
- **2-Formyl-1,3-dithians**
- Synthesis 625
- **5-Halo-2,4-alkadienals**
- Synthesis 594
- **2-Haloalkanals**
- Synthesis 143, 419 (5784), 644
- **3-Halo-2-alkenals**
- Synthesis and Reactions 326
- **2-Halo-5-hydroxy-2,4-pentadienals**
- Synthesis 592
- **5-Hydroxy-2,4-alkadienals and *O*-Derivatives**
- Synthesis 591, 592
- **2-Hydroxyalkanals**
- Synthesis 674 (5868)
- **2-Mercaptoalkanals and *S*-Derivatives**
- Synthesis 500 (5808)
- **3-Mercaptoalkanals and *S*-Derivatives**
- Synthesis 336 (5752), 1032, 1091
- Oxidative Desulfenylation 336 (5752), 392
- Reactions 1032, 1091
- Reductive Desulfenylation 336 (5752)
- **3-Mercapto-2-alkenals and *S*-Derivatives**
- Synthesis 587 (5841)
- **4-Mercapto-2-alkenals and *S*-Derivatives**
- Synthesis 503 (5817)
- **2-Methylenealkanals**
- Synthesis and Reduction 640
- **4-Oxoalkanals**
- Synthesis 245, 414, 673 (5866) (5867)
- Cyclization Reactions 583 (5829)
- **5-Oxoalkanals**
- Synthesis 673 (5867)
- **5-Oxo-2-alkenals**
- Reduction 245
- **Pyridinecarboxaldehydes**
- Synthesis 405, 763 (5890)
- **3-Selenylalkanals and *Se*-Derivatives**
- Synthesis 665
- **3-Siloxy-2-alkenals**
- Synthesis 233
- **4-Substituted Alkanals**
- Synthesis 856 (5910)
- **Thiophenecarboxaldehydes**
- Synthesis 133

● **Alkaloids and Relatives (Synthesis and/or Reactions)**

- Aporphine-Type Alkaloids 497 (5801)
- Berberine-Type Alkaloids 207
- β-Carboline-Type Alkaloids 373
- Couropitine-Type Alkaloids 533
- Ellipticine Derivatives 384
- Harmaline 372
- Harmine 372
- Homoaporphine-Type Alkaloids 497 (5801)
- Nauclefines 372
- Quinine Derivatives 384
- Rutaecarpine-Type Alkaloids 518, 372

● **Alkanes**

- Synthesis 250 (5711), 346, 855 (5905), 1040 (5947)
- **Methane**
- Carboxylation 350

● **Alkenes**

- Synthesis 77 (5663), 78 (5666), 79 (5669), 334 (5746), 671 (5860), 828, 955 (5924), 1015
- Addition Reactions 258 (5736)
- Chlorohydroxylation 250 (5712)
- Cyclization Reactions 339 (5761), 676 (5874)
- Cyclopropanation 690
- Epoxidation 257 (5733), 675 (5873), 810
- *N*-Functionalization 761 (5884)
- Halogenation 143
- Hydration 154
- Oxidation 761 (5883)
- Reduction 250 (5711)
- **1-Alkenes**
- Synthesis 250 (5711)
- Oxidation 151
- Reactions 81 (5674), 305
- ***C*-(1-Alkenyl)-heteroarenes**
- Oxygenation 790, 791
- **1-Aryl-1-alkenes**
- Synthesis 672 (5862)
- Cyclization Reactions 769, 871
- Oxygenation 790
- **3-Arylpropenes**
- Oxidation 813
- **Branched Alkenes**
- Synthesis 418 (5782), 945
- **Cycloalkenes**
- Amination-Nitryloxylation 818
- Nitration-Oxidation 266
- **1,1-Diaryl-1-alkenes**
- Cyclization Reactions 769
- **Exomethylenebicycloalkanes**
- Synthesis 456
- Substitution Reactions 498 (5804)
- **Non-Terminal Alkenes**
- Synthesis 333 (5743), 667 (5849), 945, 1039 (5945)
- Isomerization 1039 (5945)
- Ozonization 807
- **Non-Conjugated Dienes**

see: Dienes (non-conjugated)

- **β-Pinene**
- Synthesis 456
- **Trisubstituted Ethylenes**
- Synthesis 945

● **Alkoxycarbonylureas**

- Synthesis 101

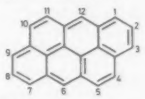
● **Alkynes**

- Cyclization Reactions 166–210
- Reductive Substitution 672 (5862), 1040 (5949)
- **Alkenynes**

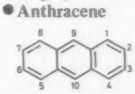
see: Enynes (non-conjugated)

- **1-Alkynes**
- Synthesis 672 (5864)

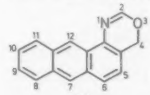
- Halogenation 143
- Hydrohalogenation 805
- Reactions 760 (5881)
- Reduction 250 (5711)
- Reductive Substitution 671 (5861), 1034
- **Arylacetylenes**
- Synthesis 628
- **1-Aryl-1-alkynes**
- Synthesis 417 (5779)
- **Diethynylarenes**
- Synthesis 628
- **Non-Terminal Alkynes**
- Synthesis 672 (5864)
- ● **Allenes**
- Synthesis 338 (5757), 760 (5881)
- **Arylallenes**
- Cyclization Reactions 778
- **ω-Hydroxyallenes and *O*-Derivatives**
- Synthesis 419 (5786)
- **Silyl 2,3-Alkadienoates**
- Synthesis 251 (5713)
- ● **Aluminum Alkoxides**
- Reactions 420 (5788)
- ● **Amide Acetals**
- Reactions 119
- **Alkanamide Acetals**
- Reactions 675 (5871)
- **Formamide *O,O*-Acetals**
- Condensation Reactions 453, 676 (5875)
- ● **Amidines**
- ***N'*-Acylamidines**
- Synthesis and Hydrolysis 119
- **2-Alkenamidines**
- Reactions 121, 893
- **4-Alkoxycarbonyl-5-oxoalkanamidines**
- Synthesis 894
- **Benzamidines**
- Synthesis 674 (5869)
- ***N'*-(2-Carboxyphenyl)-formamidines**
- Synthesis and Reactions 680
- ***N'*-Cyanoamidines**
- Synthesis 123
- Cyclization Reactions 841
- Hydration 123
- **4-Cyanoheptanediamidines**
- Synthesis 893
- **2,4-Dicyanocyclohexene-4-carboxamidines**
- Synthesis 916
- **Formamidines**
- Synthesis 883
- Cyclization Reactions 785
- **3-Mercaptoalkanamidines and *S*-Derivatives**
- Synthesis 121
- ***N'*-Thienylformamidines**
- Synthesis 133
- ● **Aminals**
- **Benzaldehyde *N,N'*-Dibenzylideneaminals**
- Reactions 833
- ● **Amines**
- Synthesis 696
- Reactions 421 (5791)
- **1,3-Alkadienamines**
- Synthesis 601
- Reactions 132
- **2,4-Alkadienamines**
- Synthesis 601
- **Alkanamines**
- Synthesis 717
- **1-Alkenamines**
see: Enamines
- **2-Alkenamines**
- Synthesis 422 (5795)
- ***N*-Alkylalkanamines**
- Synthesis 305
- ***N*-Alkylarenamines**
- Synthesis 159 (5690), 249 (5707), 295
- **2-Alkynamines**
- Reactions 422 (5795)
- **Aminoadamantanes**
- Synthesis and Reactions 473
- **Aminoexomethylenebicycloalkanes**
- Synthesis 498 (5804)
- **Aminomethylpolystyrenes**
- Synthesis 21
- **Arenamines**
- Synthesis 39, 130, 830, 864
- Reactions 582 (5826), 669 (5856)
- **Benzylamines**
- **α-Alkylation** 811
- Conversion into Aldehydes 763 (5890)
- ***N*-Benzylidenealkanamines**
- Synthesis 833
- **2-Halo-2-alkenamines**
- Reactions 587 (5843)
- ***N*-Heterocyclic *C*-Amino Compounds**
- Synthesis 40, 830
- ***o*-Hydroxybenzylamines**
- Reactions 138
- ***o*-Iodoanilines**
- Cyclization Reactions 960 (5941)
- **2-Nitrodiphenylamines**
- Synthesis 215
- **Primary Amines**
- Synthesis 249 (5709), 421 (5791), 696
- Hydrodeamination 79 (5667)
- **Secondary Amines**
- Synthesis 417 (5778), 421 (5791), 696, 717, 741, 811
- Reactions 305
- **2-Silylalkanamines**
- Synthesis 959 (5918)
- **Tertiary Amines**
- Synthesis 159 (5690), 249 (5707), 421 (5790), 696, 743
- Reactions 106
- ● **Aminium Salts**
- **Alkanaminium Salts**
- Reactions 842
- **2-Alkoxysulfonylalkanaminium Salts**
- Synthesis and Reactions 285
- **3-Oxoalkanaminium Salts**
- Synthesis and Reactions 895
- **Tetraalkylammonium Borohydrides**
- Reactions 569
- ● **Amino Acids and Derivatives**
- ***N*-Acyl-*C*-acylthioglycine Derivatives**
- Synthesis 322
- ***N*-Acylglycine Esters**
- Synthesis and Reactions 322
- ***N*-Acylglycines**
- Reactions 836
- ***N*-Acylphenylalanines**
- Synthesis 504 (5821)
- ***N*-Alkoxycarbonylamino Acid Esters**
- Synthesis and Hydrolysis 344 (5777)
- ***N*-Alkoxycarbonylamino Acids**
- Reduction 162 (5699)
- **Aminocarboxylic Acid *t*-Butyl Esters**
- Ester Cleavage 546
- **α-Aminocarboxylic Esters**
- Synthesis 260 (5739), 860 (5922)
- Deamination 69
- ***N*-(2-Nitroethylation)** 884
- Reactions 256 (5728)
- **Aminocarboxylic Ester Tosylates**
- Synthesis 676 (5877)
- **α-Amino-β-hydroxycarboxylic Acids**
- Synthesis 768 (5904)
- **α-Amino-α-methylcarboxylic Acids**
- Synthesis 1048 (5976)
- ***O*-Amino-D-serine**
- Synthesis 997
- ***N,N*-Bis[trimethylsilyl]-glycine Methyl Ester**
- Reactions 768 (5904)
- ***N*-(7-Cumaryl)-aminocarboxamides**
- Synthesis 614
- **Cyclic α-Aminocarboxylic Acids**
- Synthesis 768 (5902)
- **Free Amino Acids**
- Synthesis 344 (5777)
- Esterification 676 (5877)
- Regeneration from Protected Derivatives 3–13
- **Free α-Aminocarboxylic Acids**
- Synthesis 768 (5902) (5903), 863
- ***N*-Hydroxy-α-aminocarboxamides and *O*-Derivatives**
- Synthesis 891
- ***N*-Hydroxy-α-aminocarboxylic Esters and *O*-Derivatives**
- Synthesis 891
- **Lysine**
- Synthesis 275
- ***N*-(2-Nitroethyl)-aminocarboxylic Esters**
- Synthesis 884
- **Phenylglycine Derivatives**
- Reactions 901
- ***N*-Protected Amino Acids**
- Carboxy-Group Activation 858 (5915)
- **α-Substituted α-Aminocarboxylic Acids**
- Synthesis 260 (5741)
- **α-Vinyl-α-aminocarboxylic Acids**
- Synthesis 481
- ● **Aminohaloboranes**
- **(1-Alkenylamino)-dichloroboranes**
- Synthesis and Reactions 158 (5689)
- ● **Annulenes**
- Cycloaddition Reactions 186
- ● **Anthanthrenes**



- Ring Synthesis 174
- ● **Anthracene**



- Ring Synthesis 203, 689
- Cycloaddition Reactions 176
- ● **Anthracyclines**
- Synthesis 195
- ● **Anthra[1,2-*d*][1,3]oxazine**



4*H*-

- **2,4,7,10-Tetraoxo-1,2,7,10-tetrahydro-4*H*-anthra[1,2-*d*][1,3]oxazines**
- Ring Synthesis 511, 1091
- ● **Araliphatic Compounds**
- **Alkylbenzenes**
- Synthesis 348, 1039 (5944)
- Condensation Reactions 162 (5701)
- **Araliphatic Diene Systems**
- Diels-Alder Reactions 769 (review)
- **Diarylmethanes**
- Synthesis 157 (5686)
- ● **Arenes**
- Synthesis 77 (5662), 855 (5907)
- Acylation 139
- Diels-Alder Reactions 165 (review)
- Halogenation 486
- ● **Arsines**
- Synthesis 358
- ● **Arynes**
- Cyclization Reactions 166, 178, 179, 184, 189, 193, 200, 206, 776, 789
- ● **3-Azabicyclo[3.2.0]heptane**

- Ring Synthesis 780
- ● **3-Azabicyclo[3.1.1]heptane**

- Ring Synthesis 780

● 2-Azabicyclo[2.2.0]hexane

- 2-Azabicyclo[2.2.0]-5-hexenes
- Cycloaddition Reactions 185

● 2-Azabicyclo[3.2.2]nonane

- 2-Azabicyclo[3.2.2]-3,6-nonadienes
- Ring Synthesis 207

● 9-Azabicyclo[4.2.1]nonane

- 9-Azabicyclo[4.2.1]-2,4-nonadienes
- Ring Synthesis and Transformation 207

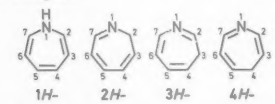
● 2-Azabicyclo[2.2.2]octane

- 2-Azabicyclo[2.2.2]-5,7-octadienes
- Ring Synthesis and Cleavage 192

● 6-Azabicyclo[3.2.1]octane

- 6-Azabicyclo[3.2.1]-2-octanes
- Ring Synthesis 192

● Azepine



1*H*- 2*H*- 3*H*- 4*H*-

- Cycloaddition Reactions 191, 207

● Azete

- 3-Alkylidene-2-oxoazetidines
- Epoxidation 588 (5845)
- Synthesis 247, 587 (5843), 588 (5845), 933
- 2,4-Dioxoazetidines
- Ring Synthesis 103
- 3-Oxiranyl-2-oxoazetidines
- Synthesis and Ring Cleavage 588 (5845)
- 2-Oxoazetidines
- Ring Synthesis 258 (5734) (5735), 778, 786, 933
- 2-Thioxoazetidines
- Ring Synthesis 786

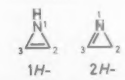
● Azido Compounds

- 1-Azidoalkyl Isocyanates
- Synthesis 102
- Azidodeoxyfuranoses
- Synthesis 557, 559
- Reactions 559
- *vic*-Azidohydroxyalkanes
- Synthesis and Cyclization Reactions 84 (5684)
- *gem*-Azidosiloxyalkanes
- Synthesis 865
- *N*-Heterocyclic *C*-Azido Compounds
- Reduction 830

● Azines

- Cyclization Reactions 785

● Azirine



1*H*- 2*H*-

- 2*H*-Azirines
- Anellation Reactions 202
- Aziridines
- Ring Synthesis 84 (5684), 650, 1006

● Azo Compounds

see: Diazenes

● Azulene

- Azulenes
- Ring Synthesis 31, 183, 596, 781
- Anellation Reactions 187
- Ring Transformation 187
- 1,2,3,4,5,6,7,8-Octahydroazulenes
- Ring Synthesis 251 (5715), 337 (5754)
- Decahydroazulenes
- Ring Synthesis 389

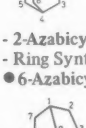
● Barbituric Acid Derivatives

- Synthesis 178

● Belladonnin

- Synthesis 772

● Benz[3,4]anthra[9,1-*bc*]furan



6*H*-

- 6-Oxo-6*H*-Derivatives
- Ring Synthesis 200

● [4]Benzazepino[4,3-*b*]quinazoline

- 14-Oxo-6,11,12,14-tetrahydro Derivatives
- Ring Synthesis 523

● 1-Benzazocine

- 2-Oxo-1,2-dihydro-1-benzazocines
- Ring Synthesis 777

● Benzenes

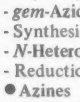
- Carbonylation 351
- Alkylbenzenes
- Synthesis 348, 1039 (5944)
- Functionally Substituted Benzenes
- Ring Synthesis 184, 198, 204, 950
- Reduction 198
- Methylbenzenes
- Synthesis 1039 (5944)
- Oxidation 477
- 1,3,5-Triacylbenzenes
- Ring Synthesis 29

● Benzimidazole

2*H*-

- 2-Oxo-2,3-dihydrobenzimidazoles
- Ring Synthesis 529

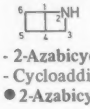
● Benzo[*b*]benzocyclobuta[*d*]pyran



5*H*-

- 5-Oxo-1,2,3,4,4a,4b,10a,10b-octahydro-5*H* Derivatives
- Ring Synthesis 777

● Benzo[*a*]biphenylene



- 4a,10c-Dihydrobenzo[*a*]biphenylenes
- Ring Synthesis and Transformation 773

● Benzo[*b*]chrysene

- Ring Synthesis 175

● Benzo[*f*]cinnoline

- Hydro Derivatives
- Ring Synthesis 790

● Benzo[6,7]cyclohepta[1,2-*b*]quinoline

5*H*-

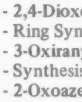
- 6,7-Dihydro-5*H*-Derivatives
- Ring Synthesis 326

● Benzocycloheptene

5*H*- 7*H*-

- 5*H*-Benzocycloheptenes
- Ring Synthesis 208
- 8,9-Dihydro-7*H*-benzocycloheptenes
- Substituent and Anellation Reactions 326
- 5-Methylene-6,7,8,9-tetrahydrobenzocycloheptenes
- Ring Synthesis 419 (5785)
- Decahydrobenzocycloheptenes
- Ring Synthesis 389

● Benzo[*b*]cycloocta[*d*]furan



- 6a,7a,8,11,11a,11b-Hexahydro Derivatives
- Ring Synthesis 791

● Benzocyclooctene

- 5,6,9,10-Tetradehydrobenzocyclooctenes
- Anellation Reactions 203
- 6-Oxo-5,6,7,8,9,10-hexahydrobenzocyclooctenes
- Ring Synthesis 862

● 1,4-Benzodiazepine

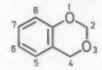
1*H*- 3*H*-

- 5-Oxo-4,5-dihydro-3*H*-1,4-benzodiazepines
- Ring Synthesis 519
- 2,5-Dioxo-2,3,4,5-tetrahydro-1*H*-1,4-benzodiazepines
- Ring Synthesis 519

● 1,2-Benzodioxin

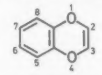
- 3,4-Dihydro-1,2-benzodioxins
- Ring Synthesis 783

● 1,3-Benzodioxin



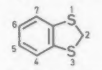
- Ring Synthesis 724

● 1,4-Benzodioxin



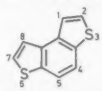
- 2,3-Dihydro-1,4-benzodioxins
- Ring Synthesis 370

● 1,3-Benzodithiole



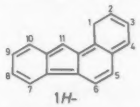
- 1,3-Benzodithioles
- Ring Synthesis 115, 157 (5686)
- Ring Cleavage 157 (5686), 162 (5700)
- 1,3-Benzodithiolium Salts
- Ring Synthesis and Reduction 157 (5686)

● Benzo[2,1-*b*;3,4-*b'*]dithiophene



- Ring Synthesis 205

● Benzo[*a*]fluorene



1*H*-

- 1,4-Dioxo-4,4a,5,11,11a,11b-hexahydro-1*H*-benzo[*a*]fluorenes
- Ring Synthesis 789

● 1-Benzofuran

- 1-Benzofurans
- Ring Synthesis 222, 236, 344 (5776)
- 2,3-Dihydro-1-benzofurans
- Ring Synthesis 58
- 2-Oxo-2,3-dihydro-1-benzofurans
- Ring Synthesis 168
- 4,5,6,7-Tetrahydro-1-benzofurans
- Ring Synthesis 52
- Ring Transformation 200
- 3-Methylene-2-oxo-2,3,3a,4,5,7a-hexahydro-1-benzofurans
- Synthesis 501 (5812)
- 2-Oxooctahydro-1-benzofurans
- Ring Synthesis 501 (5811) (5812)

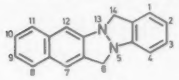
● 2-Benzofuran

- 2-Benzofurans
- Ring Synthesis 132, 190
- Ring Transformation 202
- 1-Oxo-1,3-dihydro-2-benzofurans
- Ring Synthesis 72

● Benzofurazan

- Benzofurazan 1-Oxides (Benzofuroxans)
- Reduction 146

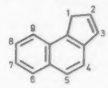
● Benzo[5,6]indazolo[2,1-*a*]indazole



6*H*,14*H*-

- 6,14-Dioxo-6*H*,14*H* Derivatives
- Ring Synthesis 382

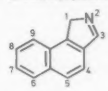
● Benzo[*e*]indene



1*H*-

- $\Delta^{3a,9b}$-Decahydro-1*H*-benzo[*e*]indenes
- Ring Synthesis 957 (5929)

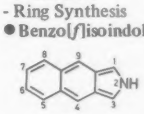
● Benzo[*e*]isoindole



1*H*-

- 2,3,3a,4,5,9b-Hexahydro-1*H*-benzo[*e*]isoindoles
- Ring Synthesis 777

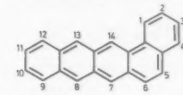
● Benzo[*f*]isoindole



2*H*-

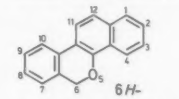
- 1,3,3a,9a-Tetrahydro-2*H*-benzo[*f*]isoindoles
- Ring Synthesis 185

● Benzo[*a*]naphthacene



- Ring Synthesis 175

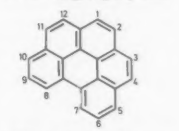
● Benzo[*d*]naphtho[1,2-*b*]pyran



6*H*-

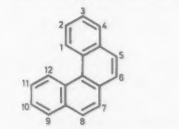
- 6,7-Dioxo-7,8,9,10-tetrahydro-6*H* Derivatives
- Ring Synthesis 716

● Benzo[*ghi*]perylene



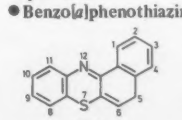
- Ring Synthesis 174, 206

● Benzo[*c*]phenanthrene



- Benzo[*c*]phenanthrene and 5,6-Dihydro Derivatives
- Synthesis 789

● Benzo[*a*]phenothiazine



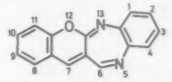
5*H*-

- 5-Oxo-5*H*-benzo[*a*]phenothiazines
- Ring Synthesis and *C*-Acylation 313

● 1-Benzopyran

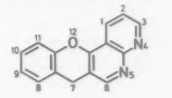
see: Chromenes

● [1]Benzopyrano[2,3-*b*][1,5]benzodiazepine



- 7-Oxo-7,13-dihydro Derivatives
- Ring Synthesis 701

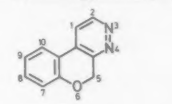
● [1]Benzopyrano[3,2-*c*][1,8]naphthyridine



7*H*-

- 6,7-Dioxo-5,6-dihydro-7*H* Derivatives
- Ring Synthesis 528

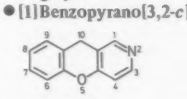
● [1]Benzopyrano[3,4-*c*]pyridazine



5*H*-

- 5-Oxo-5*H* Derivatives
- Ring Synthesis 190

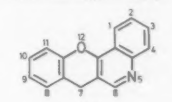
● [1]Benzopyrano[3,2-*c*]pyridine



10*H*-

- 3,10-Dioxo-2,3,4,4a-tetrahydro-10*H* Derivatives
- Ring Synthesis 778

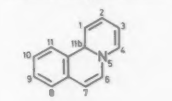
● [1]Benzopyrano[3,2-*c*]quinoline



7*H*-

- 6,7-Dioxo-5,6-dihydro-7*H* Derivatives
- Ring Synthesis 528

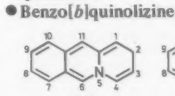
● Benzo[*a*]quinolizine



11b*H*-

- 4-Oxo-1,4,6,7-tetrahydro-11b*H*-benzo[*a*]-quinolizines
- Syntheses 996

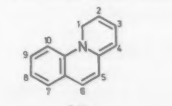
● Benzo[*b*]quinolizine (Acridizine)



2*H*- 4*H*-

- Benzo[*b*]quinolizinium Salts (Acridizinium Salts)
- Cycloaddition Reactions 208
- 6-Oxo-1,2,3,4-tetrahydro-6*H*-benzo[*b*]-quinolizines
- Ring Synthesis 845

● Benzo[*c*]quinolizine

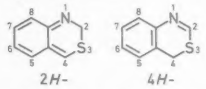


1*H*-

- 1-Oxo-1*H*-benzo[*c*]quinolizines
- Ring Synthesis 209
- 6a,9-Dihydro-4a*H*-benzo[*c*]quinolizines
- Ring Synthesis 792
- **3,1,2-Benzothiadiazine**

4*H*-

- 4-Oxo-4*H*-3,1,2-benzothiadiazines
- Ring Synthesis and Transformation 515
- **3,1-Benzothiazine**

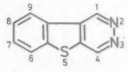


2*H*- 4*H*-

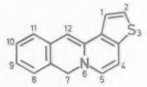
- 2,4-Dioxo-1,2-dihydro-4*H*-3,1-benzothiazines
- Ring Synthesis 510
- 2,4-Dithioxo-1,2-dihydro-4*H*-3,1-benzothiazines
- Ring Synthesis 531
- **1,3-Benzothiazole**

- Ring Synthesis 515
- Side-Chain Reactions 317
- **2,1-Benzothiazole**

- 2,1-Benzothiazolium Salts
- Ring Transformation 513
- 3-Oxo-1,3-dihydro-2,1-benzothiazoles
- Ring Synthesis 516
- 3-Thioxo-1,3,4,5,6,7-hexahydro-2,1-benzothiazoles
- Ring Synthesis 567
- **[1]Benzothieno[2,3-*d*]pyridazine**



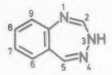
- Ring Synthesis 190
- **Benzo[*g*]thieno[2,3-*a*]quinolizine**



7*H*-

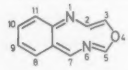
- 4,5,12,12a-Tetrahydro-7*H*-Derivatives
- Ring Synthesis 469
- **1-Benzothiophene**

- 1-Benzothiophenes
- Anellation Reactions and Ring Transformation 190
- 1-Benzothiophene 1-Oxides
- Ring Synthesis 355
- **1,3,4-Benzotriazepine**

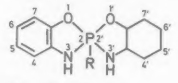


3*H*-

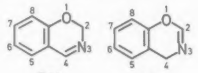
- 5-Oxo-4,5-dihydro-3*H*-1,3,4-benzotriazepines
- Ring Synthesis 525
- **4,1,6-Benzoxadiazonine**



- 1,2,3,5,6,7-Hexahydro-4,1,6-benzoxadiazonines
- Ring Synthesis 519
- **1,3,2-Benzoxazaphosphole**
- 2,2'-(3*H*,3*H*')-Spirobi[1,3,2-benzoxazaphospholes]

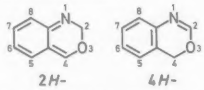


- Ring Synthesis 1004
- **1,3-Benzoxazine**



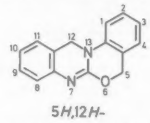
2*H*- 4*H*-

- 2-Oxo-3,4-dihydro-2*H*-1,3-benzoxazines
- Ring Synthesis 96
- **3,1-Benzoxazine**



2*H*- 4*H*-

- 4-Oxo-4*H*-3,1-benzoxazines
- Ring Synthesis 381, 510, 516, 520, 528, 530, 679
- Anellation Reactions 381
- Ring Cleavage 679
- Ring Transformation 381
- 2,4-Dioxo-1,2-dihydro-4*H*-3,1-benzoxazines *see:* Isatoic Anhydrides
- **[3,1]Benzoxazino[2,1-*b*]quinoxaline**



5*H*,12*H*-

- 5,12-Dioxo-5*H*,12*H* Derivatives
- Ring Synthesis 531
- **1,3-Benzoxazole**

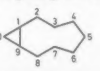
- Side-Chain Reactions 317
- **2,1-Benzoxazole**

- Ring Synthesis 678
- Ring Cleavage 678, 683
- **1-Benzoxocin**

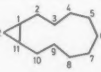
2*H*-

- 2-Oxo-2*H*-1-benzoxocins
- Ring Synthesis 777
- **Benzvalenes (Tricyclo[3.1.0.0^{2,4}]hexenes)**

- Ring Transformation 173
- **6,6'-Biazulenyls**
- Synthesis 31
- **Bicyclo[7.1.0]decane**



- Ring Synthesis 465
- **Bicyclo[9.1.0]dodecane**



- Ring Synthesis 465
- **Bicyclo[2.2.1]heptane**

- Anellation Reactions 201
- **Bicyclo[3.2.0]heptane**

- Bicyclo[3.2.0]-2-heptenes
- Ring Synthesis and Transformation 339 (5761)
- **Bicyclo[4.1.0]heptane**

- Bicyclo[4.1.0]heptanes
- Ring Synthesis 465
- 2,5-Dioxobicyclo[4.1.0]-3-heptenes
- Ring Synthesis 821
- **Bicyclo[2.2.0]hexane**

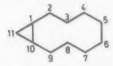
- Bicyclo[2.2.0]hexadienes (Dewar Benzenes)
- Reactions 193, 201
- **Bicyclo[3.1.0]hexane**

- Ring Synthesis 27, 463
- **Bicyclo[2.2.2]octane**

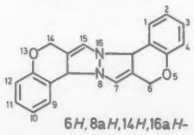
- Bicyclo[2.2.2]octenes
- Ring Synthesis 204
- Bicyclo[2.2.2]-2-octene-5,6-dicarboxylic Anhydrides
- Ring Synthesis 238
- Bicyclo[2.2.2]octatrienes
- Ring Synthesis 166, 168
- **Bicyclo[4.2.0]octane**

- Bicyclo[4.2.0]-2,4-octadienes
- Ring Synthesis 170
- **Bicyclo[5.1.0]octane**

- Ring Synthesis 465
- **Bicyclo[8.1.0]undecane**



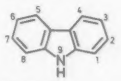
- Ring Synthesis 465
- **2,2'-Binaphthyls**
- Anellation Reactions 175
- **Biphenyls**
- Synthesis 669 (5856), 1047 (5971)
- *o*-Hydroxybiphenyls
- Synthesis 634
- Polyhalobiphenyls
- Synthesis 348, 359
- **Bis[1]benzopyrano[3',2':1,2;3',2':5,6]pyrazolo[1,2-*a*]pyrazole**



6*H*,8a*H*,14*H*,16a*H*-

- Ring Synthesis 785
● Biuret and Derivatives
- Synthesis 101
● Boranes
- 1-Alkenylboranes
- Reactions 418 (5783), 672 (5862), 1041 (5950) (5951)
- 2-Alkenylboranes
- Reactions 902, 904
- 4-Alkynylboranes
- Reactions 1046 (5968)
- Dialkylboranes
- Reactions 151
- Trialkylboranes
- Synthesis 153
- Oxidation 152
- Reactions 162 (5700), 945
● Boronic Acids and Esters
- Bis[arylthio]-methaneboronic Acids and Esters
- Synthesis and Reactions 253 (5720)
● *C*-Bromo-*C*-chloro Compounds
- *gem*-Bromochloroalkanes
- Reactions 644
- *vic*- Bromochloroalkanes
- Synthesis 144
- 1-Bromo-1-chloro-1-alkenes
- Synthesis 760 (5880)
- Bromochloroalkenes Type Br–C=C–Cl
- Synthesis 144
● *C*-Bromo Compounds
- Synthesis 343 (5774), 668 (5851)
- Reactions 581 (5831)
- Reduction 425
- Arylbromoacetylenes
- Reactions 355
- Bromoalkanes
- Synthesis 355, 667 (5850), 746
- Reactions 83 (5681), 113, 161 (5697)
- 2-Bromo-1-alkenes
- Synthesis 805
- Bromoalkenes Type C=C–Br
- Synthesis 805
- Reactions 333 (5743), 342 (5771), 418 (5783)
- Bromoalkenes Type C=C–C–Br
- Synthesis 456, 843
- 2-Bromoalkyl Carboxylates
- Synthesis 340 (5763)
- 1-Bromo-1-alkynes
- Reactions 418 (5783)
- Bromoarenes
- Synthesis 409, 582 (5826), 882
- Hydrodebromination 77 (5662)
- Reactions 341 (5766), 409
- α-Bromocarbonyl Compounds
- Synthesis 143, 487, 581 (5823), 582 (5827), 583 (5828)
- Reactions 419 (5784)
- Bromomethyl Compounds
- Synthesis 914
- Bromomethylsilanes
- Synthesis 319
- Bromophenols
- Synthesis 487
- Reactions 494
- Bromopyridines
- Synthesis 378, 596
- 1,ω-Dibromo-2,(ω-1)-alkadienes
- Synthesis and Reactions 759 (5879)
- 1,1-Dibromoalkanes
- Reactions 644
- *vic*-Dibromoalkanes
- Synthesis 143
- Dibromoalkenes Type Br–C=C–Br
- Synthesis 143
- *gem*-Dibromocyclopropanes
- Reactions 338 (5757)
- Reduction 445, 446
- 2,5-Dibromothiophenes
- Synthesis 1021
- Tribromomethyl Compounds
- Reactions 644
● *C*-Bromo-*C*-fluoro Compounds
- *vic*-Bromofluoroalkanes
- Synthesis 759 (5878)
- Bromofluoroalkenes Type F–C=C–Br
- Synthesis 759 (5878)

● Caffeine
- Synthesis 852
● Carbamic Acid Azides
- Synthesis 99, 1090
● Carbamic Acid Esters
- Synthesis 254 (5724), 764 (5893)
- *N*-Adamantylcarbamic Esters
- Synthesis 473
- *N*-(1-Alkoxyalkyl)-carbamic Esters
- Synthesis 96
- Alkyl Carbamates
- Reductive Alkylation 421 (5790)
- *N*-Alkylidenecarbamic Esters
- Synthesis 96, 107
- Benzyl Carbamates
- Reactions 723
- *N*-Cyanocarbamic Esters
- Synthesis 102
- *N*-(1-Haloalkylidene)-Carbamic Esters
- Synthesis 97, 104
- *N*-(2-Mercaptoalkyl)-carbamic Esters
- Synthesis 924
● Carbamic Acid Halides
- Reactions 841
● Carbamic Acids
- Cobamid-carbamic Acids
- Synthesis 1000
● Carbamimidic Halides
- Synthesis 619
● Carbamimidothioic Acid Esters (Isothioureas)
- Synthesis and Reactions 62, 285
● Carbazole



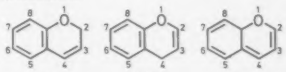
- Carbazoles
- Ring Synthesis 196
- 1,2,3,9a-Tetrahydrocarbazoles
- Ring Synthesis 790
● Carbodiimides
- Synthesis and Reactions 756
- *N*-(1-Haloalkyl)-carbodiimides
- Synthesis 105
- *N*-(1-Isocyanatoalkyl)-carbodiimides
- Synthesis 102
● Carbohydrates, General
- Synthesis and Cleavage of Protected Derivatives 13
● Carbon Disulfide
- Reactions 1001
● Carbonic Acid Esters
- Synthesis 254 (5724)
- Di-*t*-alkyl Carbonates
- Synthesis 485
- 3-Sulfonylalkyl Carbonates
- Cyclization Reactions 860 (5920)
● Carbonimidic Dichlorides
- Reactions 93
● Carboximidic Acid Esters
- Alkanimidic Esters
- Cyclization Reactions 190
- 2-Alkoxycarbonylalkanimidic Esters
- Reactions 123
- Alkyl Carboximidates
- Synthesis 855 (5906)
- Reactions 845
- Aryl Arenecarboximidates
- Synthesis 114
- *N*-Cyanomidic Esters
- Synthesis 123
● Carboximidic Acid Halides
- Arenecarboximidoyl Halides
- Reactions 114, 845
- 3,3-Diamino-2-cyanopropenimidoyl Halides
- Synthesis 619
● Carboximidothioic Acid Esters
- Synthesis 114
- Reactions 674 (5869), 855 (5906)
● Carboxylic Acid Amides
- Synthesis 222, 243, 352, 548 [1091], 661, 764 (5893), 958 (5934), 1044 (5962)
- *O*-Alkylation 855 (5906)
- Degradation Reactions 249 (5709)
- Dehydration 657
- 3-Acyl-6-nitrilohexanamides
- Synthesis and Reactions 395
- Alkanamides
- Dehydrogenation 1040 (5948)
- 2-Alkenamides
- Synthesis 385, 1040 (5948)
- 3-Alkenamides
- Synthesis and Reactions 675 (5871)
- *N*-Alkylcarboxamides
- Synthesis 349
- Reductive Alkylation 421 (5790)
- Aminoacetamides
- Oxidation 322
- 2-Aminoalkanamides
- Reactions of the Amino Group 69
- 2-Amino-2-alkenamides
- Synthesis 836
- *o*-Aminobenzamides
- Synthesis 63, 517, 719
- Aminohaloacetamides
- Synthesis and Reactions 322
- Arenecarboxamides
- Synthesis 341 (5766)
- *N*-Arylacetamides
- Synthesis 887
- *N*-Arylcarboxamides
- Synthesis 483
- Cleavage 12, 1090
- Cyclization Reactions 841
- Reactions 884
- *N*-(2-Benzoylphenyl)-carboxamides
- Synthesis and Reactions 682
- ω-Cyanoalkanamides
- Cyclization Reactions 252 (5716)
- *N,N*-Dialkylcarboxamides
- Cyclization Reactions 841
- Reduction 995
- Formamides
- Cyclization Reactions 57
- Reactions 884
- 3-Haloalkanamides
- Cyclization Reactions 258 (5734)
- *N*-(2-Haloaryl)-2-alkenamides
- Cyclization Reactions 1047 (5971)
- 4-Hydroxy-5-oxoalkanamides
- Synthesis and Oxidative Cleavage 36
- 2-Mercaptoalkanamides and *S*-Derivatives
- Cyclization Reactions 258 (5735)
- *N*-(2-Mercaptoalkyl)-carboxamides
- Synthesis 924
- ω-Nitroalkanamides
- Synthesis 273
- 4-Oxoalkanamides
- Synthesis 36
- *N*-Perfluoroalkylcarboxamides
- Synthesis 99
- *N*-Phenethyl-thiophene-3-acetamides
- Synthesis and Cyclization Reactions 1021
- 3-Silyl-4-alkenamides
- Synthesis and Reactions 675 (5871)
- *N*-Thienylacetamides
- Synthesis 133
- *N*-(Thienylethyl)-phenylacetamides
- Synthesis and Cyclization Reactions 469
● Carboxylic Acid Anhydrides
- Reactions 119, 344 (5776)
- Reduction 157 (5686), 695

● Carboxylic Acid Azides
- Synthesis 866
● Carboxylic Acid Bromides
- Synthesis 581 (5824), 1045 (5963)
- 2-Alkenoyl Bromides
- Cyclization Reactions 957 (5931)
● Carboxylic Acid Chlorides
- Synthesis 1044 (5962), 1045 (5963)
- Conversion into Esters 402
- Conversion into Thioesters 341 (5767)
- Cyclization Reactions 344 (5776)
- Reduction 157 (5686), 1043 (5958)
- Reductive Substitution to give Ketones 334 (5747), 763 (5891)
- Alkanoyl Chlorides
- Reactions 673 (5866)
- Reduction 695
- 2-Alkenoyl Chlorides
- Cyclization Reactions 251 (5715)
- Aroyl Chlorides
- Cyclization Reactions 256 (5729)
- Haloacetyl Chlorides
- Synthesis 1042 (5955)
- 2-Haloalkanoyl Chlorides
- Cyclization Reactions 155
- 2-Halo-2-alkenoyl Chlorides
- Cyclization Reactions 177
- 2-Selenylalkanoyl Chlorides and *Se*-Derivatives
- Synthesis and Reactions 933
- Trichloroacetyl Chloride
- Cyclization Reactions 339 (5761)
● Carboxylic Acid Esters
- Synthesis 314, 402, 485, 502 (5814), 548, 674 (5870), 926, 1044 (5962)
- Conversion into Alkenes 418 (5782), 1015
- Conversion into Nitriles 1046 (5967)
- Conversion into Silyl Esters 546
- Ester Cleavage 80 (5672), 863, 958 (5934)
- Reduction 157 (5686)
- Reductive Alkylation 877
- Acetic Esters
- Synthesis 350
- Acylamino-(acylthio)-acetic Esters
- Synthesis 322
- 2,4-Alkadienoic Esters
- Ozonization 807
- 1,3-Alkadienyl Carboxylates
- Cyclization Reactions 132
- Alkanoic Esters
- Synthesis 69, 336 (5751), 340 (5765), 342 (5769)
- Conversion into Ketene *S,S*-Acetals 503 (5816)
- α-(1-Hydroxyalkylation) 340 (5764)
- Indirect α-Alkylation and α-Alkylidenation 336 (5752)
- *O*-Silylation 766 (5898)
- 2-Alkenoic Esters
- Synthesis 334 (5745), 335 (5750), 336 (5752), 497 (5802), 857 (5913)
- Cyclization Reactions 198, 208, 762 (5886), 1042 (5954)
- Cyclopropanation 642
- Oxidation 253 (5719)
- Reactions 317, 420 (5789), 490, 503 (5816), 816, 1042 (5953), 1043 (5956)
- 3-Alkenoic Esters
- Synthesis 675 (5871)
- 4-Alkenoic Esters
- Synthesis 342 (5770)
- 2-Alkenyl Carboxylates
- Reduction 955 (5924)
- Alkyl Carboxylates
- Synthesis 352, 485
- 2-Alkynoic Esters
- Cyclization Reactions 115, 177, 183, 201, 209
- Reductive Alkylation 334 (5745)
- 2-Aminoalkanoic Esters
- Cyclization Reactions 311
- Reactions 69, 256 (5728)
- 3-Aminoalkanoic Esters
- Synthesis 859 (5918)
- 3-Amino-2-alkenoic Esters
- Cyclization Reactions 996
- Elimination Reactions 162 (5701)
- 2-Aminobenzoic Esters
- Synthesis 57, 195, 514
- Cyclization Reactions 311
- 2-Amino-4,5-dihydrofuran-3-carboxylic Esters
- Synthesis and Cyclization Reactions 698
- Arylacetic Esters
- Synthesis 424 (5799)
- Addition, Condensation, Substitution 162 (5701)
- 3-Aryl-3-cyanopropanoic Esters
- Synthesis and Cyclization Reactions 663
- Aryl Formates
- Cyclization Reactions 726
- Arylglyoxylic Esters
- Cyclization Reactions 642
- 2-(1-Arylthioalkyl)-3-hydroxyalkanoic Esters
- Synthesis 420 (5789)
- Benzoic Esters
- Synthesis 341 (5766)
- Bromination 409
- Indirect Reduction 1039 (5944)
- Reduction 734
- Benzyl Acetates
- Synthesis 477
- Coumarin-4-butanoic Esters
- Synthesis 716
- Cyanoacetic Esters
- Synthesis 162 (5701)
- 2-Cyanoalkanoic Esters
- Synthesis 453
- Alkylation 421 (5792)
- 2-Cyano-2-alkenoic Esters
- Dealkoxycarbonylation 160 (5694)
- 2-Cyano-3-oxoalkanoic Esters
- Synthesis 256 (5729)
- α-Cyano-1,2,3,4-tetrahydroisoquinolin-1-ylidenacetic Esters
- Synthesis and Dealkoxycarbonylation 1020
- Cyclopropanecarboxylic Esters
- Synthesis 762 (5888), 958 (5935)
- 2,3-Dialkoxypropenoic Esters
- Synthesis 991
- β,γ-Diarly-1,3-benzoxazole (or -1,3-benzothiazole)-2-butanoic Esters
- Synthesis 317
- 2-(2,2-Dichlorovinyl)-cyclopropanecarboxylic Esters
- Synthesis 554
- 2,4-Dicyano-3-oxocyclohexene-4-carboxylic Esters
- Synthesis 916
- 2,ω-Dihaloalkanoic Esters
- Reactions 344 (5777)
- 2,2-Dihalo-4-alkenoic Esters
- Synthesis 253 (5721)
- 3,4-Dihalo-2-alkenoic Esters
- Cyclization Reactions 52
- 3,5-Dihalobenzoic Esters
- Synthesis and Reactions 409
- 2,ω-Dinitroalkanoic Esters
- Synthesis 273
- 2-Formyloxyethyl Arenecarboxylates
- Synthesis 793
- 2-Haloalkanoic Esters
- Reactions 344 (5777), 710
- ω-Haloalkanoic Esters
- Reactions 344 (5777)
- 2-Halo-2-alkenoic Esters
- Synthesis 424 (5798)
- 4-Halo-2-alkenoic Esters
- Cyclization Reactions 958 (5935)
- 2-Haloalkyl Carboxylates
- Synthesis 340 (5763)
- 3-Hydroxyalkanoic Esters
- Synthesis 340 (5764), 583 (5830), 859 (5918), 1043 (5957)
- *C*-Alkylation 1043 (5957)
- 3-Hydroxy-2-alkenoic Esters and *O*-Derivatives
- Synthesis 231, 421 (5792)
- 2-(1-Hydroxyalkyl)-2-alkenoic Esters
- Synthesis 1042 (5953)
- 4-Hydroxy-2-alkynoic Esters
- Synthesis 1046 (5969)
- *o*-Hydroxyaryl Benzoates
- Synthesis 461
- 2-Hydroxybenzoic Esters and *o*-Derivatives
- Synthesis 814
- *o*-Hydroxystyryl Esters
- Synthesis and Cyclization Reactions 58
- Indole-3-acetic Esters
- Synthesis 663
- Long-Chain Alkyl Esters of Carboxyphenyl Porphyrins
- Synthesis 538
- Mercaptoacetic Esters
- Cyclization Reactions 839
- 3-Mercaptoalkanoic Esters and *S*-Derivatives
- Synthesis, Oxidation, and Reduction 336 (5752)
- 3-Mercapto-2-alkenoic Esters and *S*-Derivatives
- Cyclization Reactions 762 (5886)
- 5-Mercapto-2-alkenoic Esters and *S*-Derivatives
- Synthesis 497 (5802)
- 3-Mercapto-4-oxo-2-alkenoic Esters and *S*-Derivatives
- Synthesis 762 (5886)
- 2-Methylbenzoic Esters
- Sulfenylation and Cyclization 73
- 2-Methylenealkanoic Esters
- Synthesis 501 (5812)
- 2-Nitroacetylbenzoic Esters
- Synthesis 277
- ω-Nitroalkanoic Esters
- Synthesis 273, 277
- 2-Oxoalkanoic Esters
- Synthesis 256 (5728)
- 3-Oxoalkanoic Esters
- Synthesis 82 (5678), 159 (5691)
- Acylation 421 (5792)
- Alkylation 421 (5792), 504 (5819)
- Cyclization Reactions 814, 957 (5930)
- Indirect Reductive Alkylation 335 (5750)
- Reaction with Nitroalkenes 407
- 4-Oxoalkanoic Esters
- Synthesis and Cyclization Reactions 458
- 9-Oxoalkanoic Esters
- Synthesis 751
- 3-Oxo-4-alkenoic Esters
- Cyclization Reactions 623
- 4-Oxo-2-alkenoic Esters
- Synthesis 253 (5719), 807
- 5-Oxo-2-alkenoic Esters
- Synthesis 497 (5802)
- 5-Oxo-6-alkenoic Esters
- Synthesis and Reduction 27
- Pentahaloaryl Carboxylates
- Synthesis 912
- Propynoic Esters
- Reactions 1046 (5969)
- Pyrrole-2-carboxylic Esters
- Synthesis 494
- Pyrrolidine-2-carboxylic Esters
- Synthesis 786
- 2-(4-Quinolylamino)-benzoic Esters
- Synthesis 54
- 3-Silylalkanoic Esters
- Synthesis 340 (5765)
- 2-Sulfenyliminoalkanoic Esters
- Synthesis and Reactions 256 (5728)
- 2-Sulfonyl-2-alkenoic Esters
- Synthesis and Dealkoxycarbonylation 806

- Tetrahydrothiophene-2-carboxylic Esters
- Synthesis 839
- Trimethylsilylmethyl Carboxylates
- Synthesis and Reduction 318
● Carboxylic Acid Fluorides
- Synthesis 667 (5850), 1045 (5963)
- Alkanoyl Fluorides
- Reactions 352, 353
● Carboxylic Acid Hydrazides
- Synthesis 244
- Alcoholytic or Hydrolytic Cleavage 314
- Conversion into Selenoethers 343 (5772)
- Cyclization Reactions 311
● Carboxylic Acid Imides
- Synthesis 119
- *N*-Aroylarenecarboxamides
- Synthesis 114
● Carboxylic Acid Iodides
- Synthesis 1045 (5963)
● Carboxylic Acids
- Synthesis 80 (5672), 157 (5685), 314, 863, 958 (5934)
- Amidation 661
- Brominative Decarboxylation 668 (5851)
- Conversion into Acyl Halides 1044 (5962), 1045 (5963)
- Esterification 502 (5814), 674 (5870)
- Reduction 157 (5686), 695
- Acetic Acid
- Synthesis 350
- 2,4-Alkadienoic Acids
- Synthesis 816
- Alkanoic Acids
- Synthesis 350, 586 (5838)
- Condensation Reactions 256 (5729)
- 2,4,6-Alkatrienoic Acids
- Synthesis 608
- 2-Alkenoic Acids
- Synthesis 334 (5745)
- Amide Formation 385
- Cyclization Reactions 726
- Reductive *C*-Acylation 490
- 3-Alkenoic Acids
- Cyclization Reactions 500 (5810)
- 4-Alkenoic Acids
- Cyclization Reactions 501 (5811)
- 2-Alkynoic Acids
- Reductive Alkylation 334 (5745)
- Substitution Reactions 251 (5713)
- 2-Amino-2-alkenoic Acids
- Synthesis 901
- Reduction 504 (5821)
- 2-Amino-3-alkenoic Acids
- Synthesis 481
- 2-Aminobenzoic Acids
- Synthesis 57, 514
- 3-Aroyl-3-alkenoic Acids
- Synthesis 826
- 3-Aroyl-4-alkenoic Acids
- Synthesis 826
- Arylglyoxylic Acids
- Synthesis 1045 (5966)
- 4-Aryl-4-oxoalkanoic Acids
- Reactions 826
- Benzoic Acids
- Synthesis 341 (5766), 564
- Coumarin-4-butanoic Acids
- Synthesis and Cyclization Reactions 716
- Cycloheptene-4-carboxylic Acid
- Reactions 501 (5811)
- 3,5-Dialkoxybenzoic Acids
- Synthesis 409
- 1,2-Diphenylethane-*o*-carboxylic Acids
- Synthesis and Cyclization Reactions 455
- Hexahydroazepine-2-carboxylic Acids
- Synthesis 768 (5902)
- 2-Hydroxyalkanoic Acids
- Synthesis 857
- Oxidative Decarboxylation 564
- 3-Hydroxyalkanoic Acids
- Diastereoselective Synthesis 959 (5937)
- *o*-Hydroxyarylacetic Acids
- Synthesis 111
- 2-Hydroxybenzoic Acids and *O*-Derivatives
- Synthesis 814
- 2-Hydroxylaminoalkanoic Acids
- Cyclization Reactions 55
- 4-Hydroxy-5-oxoalkanoic Acids
- Synthesis and Oxidative Cleavage 36
- ω-Iodoalkanoic Acids
- Synthesis 864
- 2-Mercapto-2-alkenoic Acids and *S*-Derivatives
- Synthesis 587 (5841)
- ω-Nitroalkanoic Acids
- Synthesis 273, 277
- 4-Oxoalkanoic Acids
- Synthesis 36, 490
- Cyclization Reactions 458
- Pentafluorobenzoic Acid
- Synthesis 352
- Piperidine-2-carboxylic Acids
- Synthesis 768 (5902)
- Pyrrole-2-acetic Acids
- Synthesis 737
- Pyrrole-2-carboxylic Acids
- Synthesis 494
- Pyrrolidine-2-carboxylic Acids
- Synthesis 768 (5902)
- Thiophenecarboxylic Acids
- Synthesis 328
- 2-Thioxo-2,3-dihydro-1,3-thiazole-5-carboxylic Acids
- Synthesis 800
● Carboxylic Acids, Reactive Derivatives
- 1-Acyl-4-benzylidene-1,4-dihydropyridines
- Reactions 485
- 3-Acyl-4-oxo-3,4-dihydro-1,2,3-benzotriazines
- Reactions with Amines 720
- 1-Acyl-2-oxo-1,3-thiazolidines
- Reduction 81 (5675)
- *N*-Acyloxyphthalimides
- Reaction with Amines 720
- 2-Acyloxypyridines
- Reactions 140
- *N*-Acyloxysuccinimides
- Synthesis 858 (5915)
- Reaction with Amines 720
- Carboxylic Acid Imidazolides
- Reactions 159 (5691)
- Carboxylic 2,4,6-Trichlorobenzoic Anhydrides
- Reactions 502 (5814)
● Cephams, Cephalosporins, and Relatives

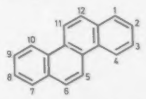
Cepham

- Cephems
- Synthesis 354
● Chalcones
- Synthesis 41
● Chlorins and Derivatives
- Synthesis 541
● *C*-Chloro Compounds
- Reduction 425
- Arylchloroacetylenes
- Reactions 355
- α-Chloroalcohols (Chlorohydrins)
- Synthesis 250 (5712)
- Chloroalkanes
- Synthesis 355, 667 (5850), 746
- Reactions 83 (5681), 113, 161 (5697)
- Chloroalkenes Type C=C–Cl
- Synthesis 158 (5687), 671 (5861), 760 (5880)
- Chloroalkenes Type C=C–C–Cl
- Synthesis 498 (5804)
- 2-Chloroalkyl Carboxylates
- Synthesis 340 (5763)
- 1-Chloro-1-alkynes
- Synthesis 956 (5926)
- Reduction 760 (5880)
- Chloroarenes
- Synthesis 582 (5826), 616
- Reactions 40
- α-Chlorocarbonyl Compounds
- Synthesis 581 (5823)
- Chloroindoles
- Synthesis and Reduction 365
- Chloropyrazines
- Reactions 40
- Chloropyridines
- Synthesis 378, 596
- Chloromethyl Sulfides
- Synthesis 952
- 2-Chlorotetrahydrofurans
- Synthesis and Reactions 343 (5774)
- 1,1-Dichloroalkanes
- Reactions 644
- 1,1-Dichloro-1-alkenes
- Synthesis 554, 760 (5880)
- Reactions 907
- *gem*-Dichlorocyclopropanes
- Reduction 445, 446
- Trichloroethylene
- Reactions 956 (5926)
- Trichloromethyl Compounds
- Synthesis 494
- Reactions 644
- Reduction 432, 433
● *N*-Chloro Compounds
- *N*-Chlorocarbamic Fluorides
- Synthesis 107
● *C*-Chloro-*C*-fluoro Compounds
- *vic*-Chlorofluoroalkanes and -alkenes
- Synthesis 759 (5878)
● *C*-Chloro-*C*-iodo Compounds
- 1-Chloro-1-iodo-1-alkenes
- Synthesis 760 (5880)
- Chloroiodomethane
- Reactions 158 (5687)
● Chloronium Salts
- Synthesis 349
● Chlorophyll and Derivatives
- Reactions 539
● Chromene

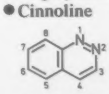


2*H*- 4*H*- 8a*H*-

see also: Coumarins, Flavones
- 2*H*-Chromenes
- Ring Transformation 778
- Chromones
- Anellation Reactions 701
- Chromans
see also: Flavans, Flavanones
- Ring Synthesis 301, 618
- 2-Oxochromans
- Synthesis and Ring Cleavage 301
- 4-Chromanones
- Ring Synthesis 725
- 8a-Hydroxy-5-oxohexahydrochromans
- Ring Synthesis and Transformation 998
● Chrysene

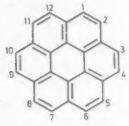


- 1,4-Dioxo-1,4,4a,4b,5,6,12,12a-octahydrochrysenes
- Ring Synthesis 789
● Cinnoline

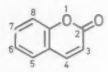


- 1,2,3,4-Tetrahydrocinnolines

- Ring Synthesis 782
● Cobamides
- Modification of the Nucleotide Base 1000
● Coronene

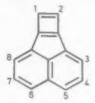


- Ring Synthesis 174
● Coumarins

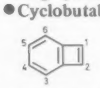


- 3-Allylcoumarins from 4-Hydroxycoumarins 48
- Ring Synthesis 716
- Reduction 301
● Crown Ether Analogs
- Synthesis 241
● Crown Ethers
- Synthesis 969
● Cubanes and Related Compounds
- Synthesis 171, 172, 202
● Cumulenes
- Synthesis 178
● Cyanamides
- Reactions 90, 620, 756
● Cyanates
- Synthesis 150
● Cyanines
- Cationic Cyanines
- Synthesis 31
- Reactions 31, 590, 592
- Merocyanines
- Synthesis 607
● Cyanogen Halides
- Reactions 90, 150
● [3.2.2]Cyclazine

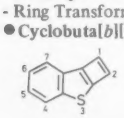
- Ring Synthesis 193
● Cyclites
- Dideoxydidehydrocyclites
- Synthesis 636
● 1,5-Cycloalkadienes
- Ring Synthesis 759 (5879)
● Cycloalkanes
- 2-Cyanocycloalkanones
- Ring Synthesis 252 (5716)
- Medium-Ring Cycloalkanones
- Ring Synthesis 765 (5895)
● Cyclobuta[*a*]acenaphthylene



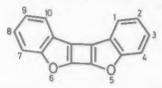
- 1,2,2a,8b-Tetrahydrocyclobuta[*a*]acenaphthylenes
- Ring Synthesis 175
● Cyclobutabenzene



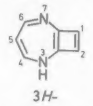
- Cyclobutabenzenes
- Diels-Alder Reactions 168
- Benzocyclobutenediones and Derivatives
- Ring Transformation 172
● Cyclobuta[*b*][1]benzothiophene



- 1,2,2a,7b-Tetrahydrocyclobuta[*b*][1]benzothiophene-1,2-dicarboxylic Anhydrides
- Ring Synthesis 205
● Cyclobuta[1,2-*b*;4,3-*b*']bis[1]benzofuran

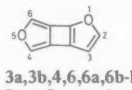


- 5a,5b,10b,10c-Tetrahydro Derivatives
- Ring Synthesis 203
● Cyclobuta[*b*][1,4]diazepine

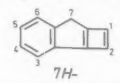


3*H*-

- 1,2-Dioxo- and 1,2,4,6-Tetraoxo-1,2,4,5,6,7-hexahydro-3*H*-cyclobuta[*b*][1,4]diazepines
- Ring Synthesis 969
● Cyclobuta[1,2-*b*;3,4-*c*']difuran

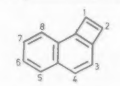


- 3a,3b,4,6,6a,6b-Hexahydro Derivatives
- Ring Synthesis 203
● Cyclobuta[*a*]indene

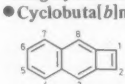


7*H*-

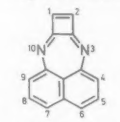
- 1,2,2a,7a-Tetrahydro-7*H*-cyclobuta[*a*]indenes
- Ring Synthesis 174, 176, 773
● Cyclobuta[*a*]naphthalene



- 1,2,2a,8b- and 2a,3,4,8b-Tetrahydrocyclobuta[*a*]naphthalenes
- Ring Synthesis 174, 175, 1090
● Cyclobuta[*b*]naphthalene

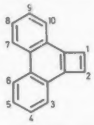


- Cyclobuta[*b*]naphthalenes
- Ring Synthesis 168
- 4,5-Dihydrocyclobuta[*b*]naphthalenes
- Ring Synthesis 167
- 1,2,2a,3-Tetrahydrocyclobuta[*b*]napthalenes
- Ring Synthesis 781
● Cyclobuta[*b*]naphtho[1,8-*ef*][1,4]diazepine



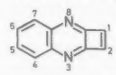
- 1,2-Dioxo-1,2,3,10-tetrahydro Derivatives
- Ring Synthesis 969
● Cyclobutanes
- Cyclobutanedicarboxylic Esters
- Ring Synthesis 784
- Cyclobutanones and Derivatives
- Synthesis 325
- Ring Synthesis and Transformation 339 (5761), 783
- Dipyridylcyclobutanes
- Ring Synthesis 793
- Functionally Substituted Cyclobutanes
- Ring Synthesis 176, 325, 773, 790
- Octahydroxycyclobutane
- Synthesis 990
● Cyclobuta[*e*][1,4,7]oxadiazonine

- 1,2-Dioxo-1,2,3,4,5,7,8,9-octahydro Derivatives
- Ring Synthesis 969
● Cyclobuta[*l*]phenanthrene

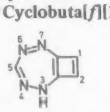


- 1,2,2a,10b-Tetrahydrocyclobuta[*l*]phenanthrenes
- Ring Synthesis 180, 181
● Cyclobutapyrazine

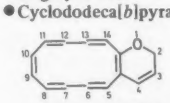
- 1,2-Dioxo-1,2,3,4,5,6-hexahydrocyclobutapyrazines
- Ring Synthesis 969, 970
- 1,2-Dithioxo-1,2,3,4,5,6-hexahydrocyclobutapyrazines
- Synthesis 978
● Cyclobuta[*b*]quinoxaline



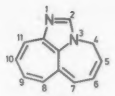
- 1,2-Dioxo-1,2-dihydrocyclobuta[*b*]quinoxalines
- Synthesis 991
- 1-Oxo-1,3-dihydrocyclobuta[*b*]quinoxalines
- Ring Synthesis 973
- 1,2-Dioxo-1,2,3,8-tetrahydrocyclobuta[*b*]-quinoxalines
- Ring Synthesis 969, 970
- 1,2-Dithioxo-1,2,3,8-tetrahydrocyclobuta[*b*]quinoxalines
- Synthesis 978
● Cyclobuta[*f*][1,2,4,5]tetrazepine



- 1,2-Dioxo-1,2,6,7-tetrahydro-3*H* and 1,2-Dioxo-1,2,4,5,6,7-hexahydro-3*H* Derivatives
- Ring Synthesis 971
● Cyclobutenes
- Cyclobutene-1,2-dicarboxylic Esters
- Ring Synthesis 543
- Cyclobutenediones and Derivatives including Squaric Acid
- Reactions 961 (review)
- Cyclobutenones and Derivatives
- Synthesis 347
- 1,2-Dicyanocyclobutenes
- Cycloaddition Reactions 201
- 1,2-Disiloxycyclobutenes
- Cycloaddition Reactions 1024
● 1,5-Cyclododecadienes
- Ring Synthesis 759 (5879)
● Cyclododeca[*b*]pyran



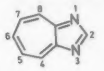
- 3-14-Dodecahydro-2*H*-cyclododeca[*b*]pyrans
- Synthesis and Ring Transformation 65
● Cyclohepta[*i*,*j*']imidazo[1,5-*a*]azepine



4H-

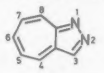
- Ring Synthesis 188

● **Cycloheptaimidazole**



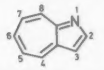
- Anellation Reactions 188

● **Cyclohepta[*c*]pyrazole**



- 1,8-Dihydrocyclohepta[*c*]pyrazoles
- Anellation Reactions 331

● **Cyclohepta[*b*]pyrrole**



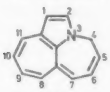
- Anellation Reactions 188, 779

● **Cyclohepta[*gh*]pyrrolizine**

2H-

- Ring Synthesis 188, 779, 1090

● **Cyclohepta[*i',j'*]pyrrolo[1,2-*a*]azepine**



4H-

- Ring Synthesis 188

● **Cycloheptatrienes**

- Oxygenation 820
- **Cycloheptatrienones (Tropones) and Derivatives**
- Diels-Alder Reactions 185, 186

● **Cycloheptenes**

- Ring Synthesis 776

● **1,5-Cyclohexadecadienes**

- Ring Synthesis 759 (5879)

● **Cyclohexadienes**

- **1,3-Cyclohexadienes**
- Ring Synthesis 57, 204, 238, 297
- Diels-Alder Reactions 238
- **1,4-Cyclohexadienes**
- Synthesis 198
- Ring Synthesis 339 (5760)
- Reduction 198
- **Cyclohexadienones and Derivatives**
- Synthesis 1036

● **Cyclohexanes**

- **1,3-Cyclohexanediones and Derivatives**
- Ring Synthesis 395
- Anellation Reactions 998
- **Cyclohexanones and Derivatives**
- Synthesis 763 (5889)
- Ring Synthesis 27
- Anellation Reactions 260 (5739)
- Ring Cleavage 752

● **Cyclohexenes**

- Ring Synthesis 132, 1042 (5954)
- Anellation Reactions 957 (5931)
- Diels-Alder Reactions 184, 208
- **3-Aminocyclohexenes**
- Ring Synthesis 773
- **Cyclohexene-1,2-dicarboxylic Esters**
- Ring Synthesis 543
- **Cyclohexene-3,4-dicarboxylic Esters**
- Ring Synthesis and Oxidation 198
- **2-Cyclohexenones and Derivatives**
- Synthesis 297, 339 (5760), 916
- Ring Synthesis 583 (5829), 765 (5896), 787, 814
- Dehydrogenation 1036
- **3-Cyclohexenones and Derivatives**
- Synthesis 198, 339 (5760)
- **1,3-Dicyano-2-oxo-3-cyclohexene-1-carboxylic Esters**
- Synthesis 916
- **3,4,5,6-Tetrahydroxycyclohexenes and *O*-Derivatives**
- Synthesis 636
- **2,6,6-Tricyano-2-cyclohexenones**
- Ring Synthesis 297

● **1,5-Cyclooctadienes**

- Ring Synthesis 759 (5879)
- Anellation Reactions 201

● **Cyclooctatetraenes**

- Diels-Alder Reactions 168

● **Cyclooctynes**

- Anellation Reactions 187

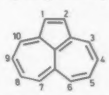
● **Cyclopenta[*cd*]azulene**

- Ring Transformation 188

● **Cyclopentadienes**

- Alkylidenation 799
- Anellation Reactions 339 (5761)
- Diels-Alder Reactions 172, 180, 187
- **Cyclopentadienones and Derivatives**
- Diels-Alder Reactions 168, 184, 185

● **Cyclopenta[*ef*]heptalene**

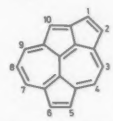


- Ring Synthesis and Transformation 188, 189

● **Cyclopentanes**

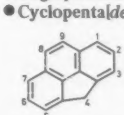
- **Cyclopentanones and Derivatives**
- Ring Synthesis 339 (5761)

● **Cyclopenta[*al*]pentaleno[6,1,2-*fgh*]heptalene**



- Ring Synthesis 189

● **Cyclopenta[*def*]phenanthrene**

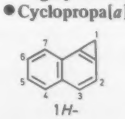


- 8,9-Dihydro-4*H* Derivatives
- Ring Synthesis 783

● **Cyclopentenes**

- Diels Alder Reactions 170, 186
- **Cyclopentene-1,2-dicarboxylic Esters**
- Ring Synthesis 543
- **2-Cyclopentenones and Derivatives**
- Synthesis 118
- Ring Synthesis 337 (5754), 414, 423 (5796), 583 (5829), 762 (5886), 957 (5930)
- **2-Siloxycyclopentenones**
- Ring Synthesis 310

● **Cyclopropa[*a*]naphthalene**



1H-

- Ring Synthesis 778

● **Cyclopropanes**

- **Cyclopropanecarboxylic Esters**
- Ring Synthesis 642, 762 (5888), 958 (5935)
- **Cyclopropane-1,1-dicarboxylic Esters**
- Ring Synthesis 690
- **Cyclopropylcarbinols**
- Ring Cleavage 673 (5865)
- **Cyclopropyl Ketones and Derivatives**
- Ring Synthesis 34
- **1,2-Diacylcyclopropanes**
- Ring Synthesis 762 (5888)
- ***gem*-Dihalocyclopropanes**
- Reduction 445
- Ring Cleavage 338 (5757)
- **Halocyclopropanes**
- Reduction 445

● **Cyclopropenes**

- **Cyclopropenones and Derivatives**
- Synthesis 347
- **Dihydroxycyclopropenone (Deltic Acid) and Derivatives**
- Ring Synthesis and Cleavage 991
- **Tetrahalocyclopropenes**
- Conversion to Cyclopropenylium Salts 225, 227

● **Cyclopropenylium Salts**

- Synthesis 225, 227
- Reactions 347

● **D-Cycloserine**

- Reactions 997

● **1,5-Cyclotetradecadienes**

- Ring Synthesis 759 (5879)

● **Deltic Acid (Dihydroxycyclopropenone)**

- Synthesis 991

● **Deuterio Compounds (Synthesis)**

- 2-Alkoxy-1-deuterio-1,4-pentadienes 903
- Benzaldehydes-1-*d* 909
- Deuterioarenes 855 (5907)
- 5-Deuterio-2-thioxo-2,3-dihydro-1,3-thiazoles 800
- Primary Amines-*N*-d_2 400
- Trialkyldeuteriostannanes 942

● **Dewar Benzenes**

see: Bicyclo[2.2.0]hexadienes

● **Dewar Thiophenes**

see: 5-Thiabicyclo[2.1.0]pentanes

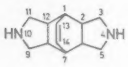
● **Dialdehydes**

- **Alkanedials**
- Synthesis 761 (5883)
- **4-Aminomethylene-2-pentenedials**
- Synthesis 592
- **Bromomalonic Dialdehyde**
- Reactions 233
- **Butanedial**
- Cyclization Reactions 689
- **Cycloalkene-1,2-dicarboxaldehydes**
- Synthesis 543
- **1,4-Diaryl-2,3-diformylbutadienes**
- Synthesis and Reactions 898
- **Dibenzylidenebutanedials and Heterocyclic Analogs**
- Synthesis and Reactions 898
- **Dichloromalonic Dialdehyde**
- Synthesis 940
- **Furan-3,4-dicarboxaldehydes**
- Synthesis and Reactions 950
- **Pentadienals**
- Synthesis and Reactions 590 (review)
- ***o*-Phthaldialdehydes**
- Cyclization Reactions 267, 689
- **Thiophenedicarboxaldehydes**
- Synthesis 133

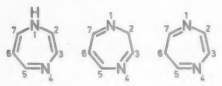
● **Diamines**

- **2-Aryl-2-hydroxy-1,4-alkanediamines**
- Synthesis and Cyclization Reactions 341 (5768), 343 (5773)
- ***N*-(Benzylaminomethyl)-1-hydroxy-3-oxo-1,3-dihydroisoindoles**

- Synthesis and Cyclization Reactions 404
- *N,N*-Dialkylalkanediamines
- Reactions without Cyclization 311
- 1,4-Diaminobenzenes
- Synthesis 579
- Diaminocyclobutenediones (Squaric Acid Diamides)
- Synthesis 966
- 2,5-Diamino-1,4-cyclohexadiene-1,4-dicarboxylic Esters
- Synthesis and Reactions 579
- Diaminodiarylethylenes
- Synthesis 1001
- 1,8-Diaminonaphthalenes
- Cyclization Reactions 155
- 2,4-Diaminopyrimidines
- Synthesis 379
- Disecondary Alkanediamines
- Synthesis 303
- 4,10-Diazatetracyclo[5.5.2.0^{2,6}.0^{8,12}]-13-tetradecenes

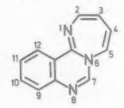


- Ring Synthesis 194
- Diazene *N*-Oxides
- Deoxygenation 255 (5726)
- Diazenes (Azo Compounds)
- Synthesis 581 (5822)
- 1-(Arylazodiphenylmethyl)-pyridinium Salts
- Synthesis and Reactions 694
- Diaryldiazenes
- Synthesis 255 (5726)
- Diazenedicarboxylic Esters
- Addition Reactions 194
- Cyclization Reactions 207, 769, 773
- 1,4-Diazepine

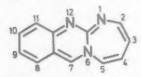


1*H*- 4*H*- 6*H*-

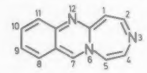
- 6-Oxo- and 6-Thioxo-6*H*-1,4-diazepines
- Ring Synthesis 1002
- [1,3]Diazepino[1,2-*c*]quinazoline



- 7-Oxo(thioxo)-2,3,4,5,7,8-hexahydro Derivatives
- Ring Synthesis 532
- [1,3]Diazepino[2,1-*b*]quinazoline

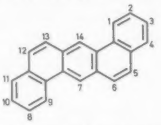


- 7-Oxohexahydro Derivatives
- Ring Synthesis 524
- [1,4]Diazepino[5,4-*b*]quinazoline

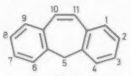


- 7-Oxo-1,2,3,4,5,7-hexahydro Derivatives
- Ring Synthesis 523
- 1,3-Diazete

- Dioxo-1,3-diazetidines
- Ring Synthesis 107
- Diazo Compounds
- Synthesis 82 (5676)
- 1,ω-Bis[diazomethyl]-diketones
- Reactions 82 (5677)
- Diaryldiazomethanes
- Synthesis 581 (5822)
- Diazoalkanes
- Reactions 670 (5857)
- α-Diazocarboxylic Esters
- Reactions 762 (5888)
- α-Diazoketones
- Synthesis 368
- Diazomethane
- Reactions 339 (5761), 855 (5906)
- Diazomethyl Ketones
- Reactions 670 (5857), 762 (5888)
- Diazonium Salts
- Reactions 116, 291, 623, 855 (5907), 858 (5916)
- Dibenzo[*a,h*]anthracene

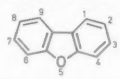


- Dibenzo[*a,h*]anthracene-7,14-quinones
- Ring Synthesis 782
- Dibenzo[*a,d*]cycloheptene

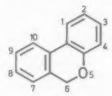


5*H*-

- 10,11-Dihydro-5*H*-dibenzo[*a,d*]cyclohepten-5-ones
- Ring Synthesis 455
- Dibenzofuran

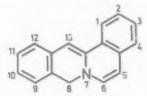


- Ring Synthesis 495
- Ring Cleavage 634
- Dibenzo[*b,d*]pyran



6*H*-

- 6,7-Dioxo-7,8,9,10-tetrahydro-6*H*-dibenzo[*b,d*]pyrans
- Ring Synthesis 716
- Dibenzo[*a,g*]quinolizine



8*H*-

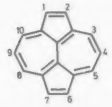
- 8-Oxo-5,6-dihydro-8*H* Derivatives
- Ring Synthesis 845
- Dibenzosemibullvalenes
- Ring Synthesis 773
- Dicarboxylic Acid Amides
- Acetylenedicarboxamides
- Synthesis 991
- 3-Acylhexanedioic Monoamides
- Synthesis and Reactions 395
- Alkylthio-fumaric Diamides
- Synthesis 992
- 2,5-Dihalo-3,4-dioxopentanediamides
- Synthesis 370
- Dicarboxylic Acid Anhydrides and *S*-Analogs
- Bicyclo[n.m.0]alkane Bridgehead-dicarboxylic Anhydrides
- Synthesis 389
- Dibenzylidenesuccinic Anhydrides
- Synthesis 898
- Homophthalic Anhydrides
- Reactions 845
- Maleic Anhydrides
- Addition Reactions 698
- Cyclization Reactions 167, 168, 169, 172, 175, 178, 180, 194, 196, 204–207, 698, 769, 771, 775–778, 781, 782, 786, 788, 793, 794
- Phthalic Anhydrides
- Synthesis 197
- Thiomaleic Anhydrides (−CO−S−CO−)
- Synthesis 197
- Dicarboxylic Acid Esters
- Acetylenedicarboxylic Esters
- Addition Reactions 258 (5736)
- Cyclization Reactions 167–210, 773, 777, 778, 779, 782, 786, 788, 791, 792, 1042 (5954)
- 3-Acylhexanedioic Esters
- Synthesis and Cyclization Reactions 395
- Alkanedioic Esters
- Synthesis 277
- (2-Alkenyl)-butenedioic Esters
- Synthesis and Cyclization Reactions 258 (5736)
- Bicyclo[n.m.0]alkane Bridgehead-dicarboxylic Esters
- Synthesis and Reactions 389
- Butanedioic Mono- and Diesters
- Synthesis 710
- Cycloalkene-1,2-dicarboxylic Esters
- Synthesis and Reduction 543
- Cyclobutane-1,2-dicarboxylic Esters
- Synthesis 784
- Cyclopropane-1,1-dicarboxylic Esters
- Synthesis 690
- 2,3-Dialkoxybutanedioic Esters
- Synthesis 991
- 2,2'-Dihaloalkanedioic Esters
- Cyclization Reactions 543
- Fumaric Esters
- Cyclization Reactions 167, 181, 784, 1042 (5954)
- Maleic Esters
- Cyclization Reactions 167, 181, 1042 (5954)
- Mesoxalic Esters
- Cyclization Reactions 642
- Naphthalene-1,2-dicarboxylic Esters
- Synthesis 778
- Nitroalkanedioic Esters
- Synthesis 277
- 3-Oxoheptanedioic Esters
- Cyclization Reactions 716
- 3-Oxopentanedioic Esters
- Cyclization Reactions 708
- Phthalic Esters
- Synthesis and Reduction 198
- Dicarboxylic Acid Imides
- *N*-(1-Alkenyl)-imides
- Synthesis 337 (5755)
- *N*-Alkylphthalimides
- Reduction 404
- *N*-Hydroxyimides and *O*-Derivatives
- Synthesis 278
- Maleic Imides
- Cyclization Reactions 169, 175, 178, 184, 185, 192, 194, 196, 203–207, 781, 786, 791, 792, 794
- Phthalimides
- Synthesis 194, 518
- Dicarboxylic Acid Monoester Amides
- 3-Acylhexanedioic Monoester Amides
- Synthesis and Cyclization Reactions 395
- Dicarboxylic Acids
- 3-Acylheptanedioic Acids
- Cyclization Reactions 395
- 3-Acylhexanedioic Acids
- Synthesis and Reactions 395
- 1-Benzothiophene-2,3-dicarboxylic Acid
- Synthesis 328
- Butanedioic Acids
- Synthesis 710

- 2,5-Diaminoterephthalic Acids
- Synthesis 579
- Fumaric Acids
- Cyclization Reactions 192
- Hexanedioic Acids
- Synthesis 279
- Naphthalene-1,2-dicarboxylic Acids
- Synthesis 771
- Thiophenedicarboxylic Acids
- Synthesis 328

● Dicyclobuta[*a,d*]benzene

- Diels-Alder Reactions 167, 168

● Dicyclopenta[*ef,kl*]heptalene



- Ring Synthesis 188

● Dienes (conjugated

- Synthesis 84 (5683), 418 (5783), 667 (5848), 668 (5853), 955 (5923) (5924), 1041 (5950)
- Acylation 339 (5762)
- Cyclization Reactions 132, 171, 179, 208, 335 (5748), 339 (5760), 492, 788, 791, 794, 1042 (5954)
- Ozonization 807
- 1,2-Bis[methylene]-cycloalkanes
- Cyclization Reactions 171

● Dienes (non-conjugated)

- 1,4-Alkadienes
- Synthesis 671 (5861), 1041 (5951)
- 1,5-Alkadienes
- Synthesis 759 (5879)

● Dienol Derivatives

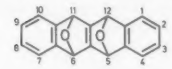
- Dienol Silyl Ethers
- Reactions 132, 497 (5802)

● 4a,7;6,8a-Diepoxy-1,4-benzodioxin

Hexahydro-

- Hexahydro Derivatives
- Ring Synthesis and Deoxygenation 370

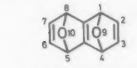
● 5,12;6,11-Diepoxynaphthacene



5,6,11,12-Tetrahydro-

- 5,5a,6,11,11a,12-Hexahydro Derivatives
- Ring Synthesis 202

● 1,4:5,8-Diepoxynaphthalene



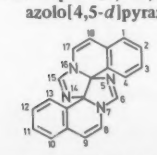
1,4,5,8-Tetrahydro-

- 1,4,4a,5,8,8a-Hexahydro Derivatives
- Ring Synthesis 198

● Digitopurpone

- Synthesis 172

● Diisoquino[2′,1′:3,3a;2″,1″:6,6a]pyrazolo[4,5-*d*]pyrazole

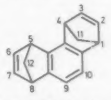


- 6,14-Dioxo-5,6,8,9,13,14,16,17-octahydro Derivatives
- Ring Synthesis 785

● Diketones

- 1-Alkene-3,5-diones
- Cyclization Reactions 623
- 2-Alkene-1,4-diones
- Synthesis 82 (5677)
- Cyclization Reactions 132
- Reduction 245
- 2-Cycloalkene-1,4-diones
- Synthesis 82 (5677)
- 1,3-Cyclohexanediones
- Synthesis 395
- Reactions 998
- 1,2-Diacylcyclopropanes
- Synthesis 762 (5888)
- *vic*-Diketones
- Synthesis 74
- Cyclization Reactions 238, 642, 900
- Enol Silyl Ether Formation 310
- 1,3-Diketones
- Synthesis 353, 669 (5854)
- Alkylation 249 (5707), 504 (5819)
- Cyclization Reactions 504 (5819)
- Indirect Reductive Alkylation 335 (5749)
- Reactions with Nitroalkenes 407
- 1,4-Diketones
- Synthesis 161 (5696), 245, 338 (5759), 352, 413, 584 (5834), 585 (5835)
- Cyclization Reactions 132, 504 (5819), 842
- 1,5-Diketones
- Synthesis 352
- 1,6-Diketones
- Synthesis 352
- Dimedones
- Reactions 998
- 1-(2-Hydroxyphenyl)-1,3-dioxo-3-phenylpropanes
- Synthesis and Cyclization Reactions 874
- 2-Nitro-1,3-diketones
- Synthesis and Reactions 261 (review)
- 7-Oxabicyclo[2.2.1]heptane-2,5-diones
- Synthesis 370

● 1,4:5,8-Dimethanophenanthrene



1,4,5,8-Tetrahydro-

- 1,4,4a,4b,5,8,8a,10a-Octahydro Derivatives
- Ring Synthesis 172

● Dinitriles

- Alkanedinitriles
- Synthesis 299
- 3,3′-Alkanediyldioxy-bis[phthalodinitriles]
- Synthesis 613
- Dicyanoacetylene
- Cyclization Reactions 166, 167, 187, 201, 204, 770, 773, 774
- 1,2-Dicyanonaphthalenes
- Synthesis 774
- Fumarodinitriles
- Cyclization Reactions 209
- Phthalodinitriles
- Synthesis 204, 287
- Cyclization Reactions 287

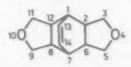
● Diols (including *O*-Protected Derivatives)

- 1,3-Alkanediols
- Synthesis 859 (5918)
- 2-Alkyne-1,4-diols
- Synthesis and Oxidation 543
- 3-Alkene-1,2-diols
- Synthesis and Reduction 50
- 6-Alkene-1,5-diols
- Synthesis 27
- 2,3-Dibenzylidene-1,4-diols
- Synthesis 898
- *vic*-Diols
- Synthesis 80 (5670), 761 (5883), 859 (5918)
- *O*-Acylation and Sulfonylation 955 (5925)
- Cyclization Reactions 241
- Oxidative Cleavage 581 (5822)
- 1,2-Disiloxycyclobutenes
- Reactions 1024
- 3-(*o*-Hydroxyaryl)-alkanols
- Synthesis and Cyclization Reactions 301
- Non-conjugated Alkadienediols
- Synthesis and Reactions 759 (5879)
- Non-conjugated Alkadiynediols
- Synthesis and Reduction 759 (5878)
- 1-*O*-Protected 3-Amino-1,2-propanediols
- Synthesis 573
- Tetralin-1,2-diols
- Synthesis and Dehydration 622

● 6,7-Dioxabicyclo[3.2.2]nonane

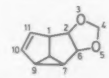
- 6,7-Dioxabicyclo[3.2.2]nonanes
- Synthesis 820
- 6,7-Dioxabicyclo[3.2.2]-3,8-nonadienes
- Ring Synthesis and Reduction 820

● 4,10-Dioxatetracyclo[5.5.2.0^{2,6}.0^{8,12}]-13-tetradecenes



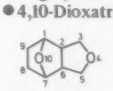
- Ring Synthesis 194

● 3,5-Dioxatetracyclo[7.2.0.0^{2,6}.0^{7,9}]-10-undecenes



- Ring-Synthesis and Transformation 170

● 4,10-Dioxatricyclo[5.2.1.0^{2,6}]decane

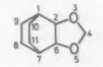


- 3,5,8-Trioxo Derivatives
- Ring Synthesis 202

● 6,7-Dioxatricyclo[3.2.2.0^{2,4}]nonane

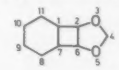
- Saturated System and -8-nonenes
- Ring Synthesis, Reduction, and Ring Transformation 820

● 3,5-Dioxatricyclo[5.2.2.0^{2,6}]undecane



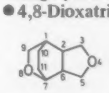
- 3,5-Dioxatricyclo[5.2.2.0^{2,6}]-8,11-undecadienes
- Ring Synthesis 171

● 3,5-Dioxatricyclo[5.4.0.0^{2,6}]undecane



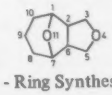
- 3,5-Dioxatricyclo[5.4.0.0^{2,6}]-8,10-undecadienes
- Ring Synthesis 170

● 4,8-Dioxatricyclo[5.2.2.0^{2,6}]undecane



- 4,8-Dioxatricyclo[5.2.2.0^{2,6}]-10-undecenes
- Ring Synthesis 194

● 4,11-Dioxatricyclo[5.3.1.0^{2,6}]undecanes

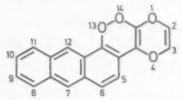


- Ring Synthesis 196

● 1,3-Dioxin

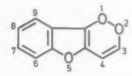
- 1,3-Dioxans
- Ring Synthesis 871

● 1,4-Dioxino[2,3-*e*]anthra[1,2-*c*][1,2]dioxin



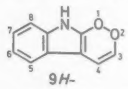
- 2,3,12b,14a-Tetrahydro Derivatives
- Ring Synthesis and Transformation 793

● 1,2-Dioxino[3,2-*b*][1]benzofuran



- 3,9b-Dihydro Derivatives
- Ring Synthesis 791

● 1,2-Dioxino[3,4-*b*]indole



9*H*-

- 3,9a-Dihydro-9*H* Derivatives
- Ring Synthesis and Cleavage 790

● 1,3-Dioxole

- 1,3-Dioxolanes
- Anellation Reactions 170, 171, 201
- Ring Cleavage 5, 340 (5763)

● Diphenols
- Catechols
- Oxidation 497 (5801), 707
- 1,8-Dihydroxynaphthalenes
- Synthesis 709
- Hydroquinones
- Synthesis 753
- Diels-Alder Reactions 168
- Oxidation 706, 753
- Resorcinols
- Synthesis 734
- Anellation Reactions 168

● Disaccharides
- Synthesis 17
- Permethylated Disaccharides
- Synthesis 954

● Diselenides
- Perfluorinated Dialkyl Diselenides
- Synthesis 356

● Disulfides
- Synthesis 32
- Reactions 127
- Alkyl Aryl Disulfides
- Synthesis 886
- Alkyl 2-Oxoalkyl Disulfides
- Synthesis 919
- Bis[3-oxoalkyl]Disulfides
- Synthesis and Reduction 910
- Bis[thioacyl] Disulfides
- Synthesis 567
- Diacyl Disulfides
- Synthesis 721
- Diphosphoryl Disulfides
- Synthesis 33
- Dipyridazinyl Disulfides
- Synthesis 410
- Dipyridyl Disulfides
- Synthesis 405
- Perfluorinated Dialkyl Disulfides
- Synthesis 356

● 1,3,5-Dithiazine

4*H*- 6*H*-

- 2,4-Dialkylidenedihydro-1,3,5-dithiazines
- Ring Synthesis 786

● 1,4-Dithiepin

- 2-Oxo-1,4-dithiepanes
- Ring Synthesis 588 (5847)

● 1,3-Dithietane

- Ring Synthesis 907

● 1,3-Dithiin

- 2-Alkylidene-1,3-dithians
- Ring Synthesis 424 (5800)
- Ring Transformation 588 (5847)
- 1,3-Dithians
- 2,2-Alkylation-Formylation 625
- 2-Substitution 164 (5705)
- 2-(2-Hydroxyalkyl)-1,3-dithians
- Synthesis and Ring Cleavage 561

● Dithiocarbamic Acid Esters
- 2-Alkenyl Dithiocarbamates
- Reactions 843

● Dithiocarbonic Acid Esters
- *S,S*-Dialkyl Dithiocarbonates
- Synthesis 375
- *O,S*-Diesters
- Synthesis 714
- Macrocyclic Dithiocarbonic Esters
- Synthesis 240

● Dithiocarboxylic Acid Esters
- Alkanadithioic Esters
- Synthesis 163 (5704), 907
- Arenedithiocarboxylic Esters
- Synthesis 163 (5703)
- Dithioarylacetic Esters
- Synthesis 736
- 2-Phosphoranylidenalkanedithioic Esters
- Synthesis and Reactions 163 (5702)(5704)

● Dithiocarboxylic Acids
- Diammonium Salts of Alkanedithioic Acids (1-Alkene-1,1-dithiolates)
- Synthesis and Reactions 907
- 2-Iminocycloalkanedithiocarboxylic Acids
- Synthesis 567

● 1,3-Dithiole

- 1,3-Dithiolium-4-oxides (Betaines)
- Cycloaddition Reactions 209
- 1,3-Dithiolanes
- Ring Cleavage 163 (5703)

● Dithiols
- Arene-1,2-dithiols
- Cyclization Reactions 115

● Dithiosquaraines
- Synthesis 989

● Dithiosquaric Acid and Derivatives
- Synthesis 977

● Diynes (conjugated)
- Diethynylarenes and Homologs
- Synthesis 628
- Reactions 196, 781

● Enamines
- Synthesis 162 (5701), 236, 271, 320, 339 (5760), 414, 464, 498 (5803)
- Cyclization Reactions 582 (5825)
- Reactions 162 (5701), 414, 504 (5819), 583 (5828), 958 (5932), 1044 (5960)
- 1-Amino-1-halo-1-alkenes
- Reactions 1045 (5963)
- 2-Haloenamines
- Reactions 498 (5805)
- *N*-Silylenamines
- Synthesis 630

● Enol Derivatives
- *vic*-Diketone Enol Silyl Ethers
- Synthesis 310
- Enol Carboxylates
- Synthesis 83 (5679), 265
- Enol Silyl Ethers
- *C*–*C* Coupling Reactions 336 (5752), 941
- Nitration 265
- Enol Sulfonates
- Synthesis 283

● Enynes (conjugated)
- Synthesis 77 (5661), 418 (5783), 667 (5848)
- Ozonization 807

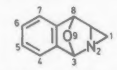
● Enynes (non-conjugated)
- 1,4-Alkenynes
- Synthesis 418 (5781), 904

● Epiepoxodine
- Synthesis 182

● Epoxides (Epoxy Compounds)
- Synthesis 257 (5733), 675 (5873), 810
- Deoxygenation 636, 828, 1039 (5945)
- 1,3-Alkadiene 3,4-Epoxides (Vinyloxiranes)
- Synthesis 859 (5919)
- 1,2;3,4-Diepoxycycloalkanes
- Synthesis 770
- 2,3-Epoxy-1-methylenecycloalkanes
- Synthesis and Reactions 872
- Indene Epoxides
- Synthesis 788
- Norcaradiene Epoxides
- Synthesis 820

● Epoxidone
- Synthesis 182

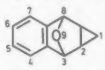
● 3,8-Epoxyazirino[1,2-*b*]isoquinoline



1,3,8,8a-Tetrahydro-

- 1,3,8,8a-Tetrahydro Derivatives
- Ring Synthesis 202

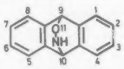
● 2,7-Epoxycyclopropa[*b*]naphthalene



2,3,8,8a-Tetrahydro-1*H*-

- 1a,2,7,7a-Tetrahydro Derivatives
- Ring Synthesis 202

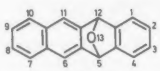
● 9,10-Epoximinoanthracene



9,10-Dihydro-

- Ring Synthesis and Cleavage 177

● 5,12-Epoxynaphthacene



5,12-Dihydro-

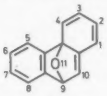
- 5,7,8,9,10,12-Hexahydro Derivatives
- Ring Synthesis 195

● 1,4-Epoxynaphthalene

1,4-Dihydro-

- Ring Synthesis 200, 202
- Ring Transformation 200

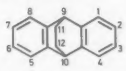
● **4a,9-Epoxyphenanthrene**



4a,9-Dihydro-

- **1,2,3,4,4a,9-Hexahydro-4a,9-epoxyphenanthrenes**
- Ring Synthesis and Transformation 200

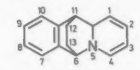
● **9,10-Ethanoanthracene**



9,10-Dihydro-

- Ring Synthesis 177, 179

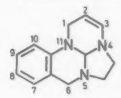
● **6,11-Ethanoacridizine**



6,11-Dihydro-11a*H*-

- **6,11-Dihydro-11a*H*-6,11-ethanoacridizinium Salts**
- Ring Synthesis 208

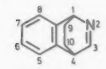
● **4,5-Ethano-2,3,4,4a,5,6-hexahydro-1*H*-pyrimido[1,2-*a*]quinazoline**



1*H*,6*H*-

- **6-Oxo Derivative**
- Ring Synthesis 525

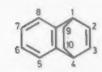
● **1,4-Ethanoisoquinoline**



1,4-Dihydro-

- **1,4-Dihydro-1,4-ethanoisoquinolinium Salts**
- Ring Synthesis 207

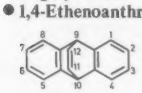
● **1,4-Ethanonaphthalene**



1,4-Dihydro-

- Ring Synthesis 166

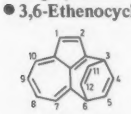
● **1,4-Ethenoanthracene**



9,10-Dihydro-

- **9,10-Dihydro-9,10-ethenoanthracenes (Dibenzobarrelenes)**
- Ring Synthesis 176, 177, 178

● **3,6-Ethenocyclopenta[*ef*]heptalene**



3,6-Dihydro-

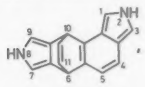
- Ring Synthesis 188

● **1,4-Ethenonaphthalene**

1,4-Dihydro-

- **1,4-Dihydro-1,4-ethenonaphthalenes**
- Ring Synthesis 166
- **1,4,4a,7-Tetrahydro-1,4-ethenonaphthalenes**
- Ring Synthesis 777
- **1,2,3,4,4a,5-Hexahydroethenonaphthalenes**
- Ring Synthesis 782

● **6,10-Ethenonaphtho[1,2-*c*;6,7-*c'*]dipyrrole**



2,6,8,10-Tetrahydro-

- **1,3,6,9-Tetraoxotetradecahydro Derivatives**
- Ring Synthesis 781

● **5,8-Ethenopyrido[1,2-*c*]pyrimidine**

5,8-Dihydro-1*H*-

- **2,2,5,6,7,8-Hexahydro-1*H* Derivatives**
- Ring Synthesis 793

● **1,4-Ethenoquinolizine**

1,4-Dihydro-9a*H*-

- **2,3,4,6,7,8-Hexahydro-1*H*-1,4-ethenoquinolizines**
- Ring Synthesis 793

● **Ethers**

- **1,3-Alkadienyl Ethers**
- Reactions 132
- **Alkanediyl Diaryl Ethers**
- Synthesis 613
- **1-Alkenyl Alkyl Ethers**
- Cleavage 118
- **1-Alkenyl Aryl Ethers**
- Synthesis 847
- **2-Alkenyl 2-Benzimidazolyl Ethers**
- Reactions 859 (5919)
- **1-Alkenyl Ethers (Enol Ethers)**
- Synthesis 337 (5756), 766 (5897), 847, 856 (5908)
- Cleavage 118
- Cycloaddition Reactions 174, 207, 773
- **2-Alkenyl Ethers (Allyl Ethers)**
- Reactions 253 (5721), 671 (5860)
- **1-Alkenyl Naphthyl Ethers**
- Synthesis 847
- **3-Alkenyl Ethers**
- Synthesis 956 (5928)
- **2-(2-Alkenyloxy)-benzimidazoles**
- Reactions 585 (5836)
- **2-Alkoxy-1,3-alkadienes**
- Synthesis 337 (5756)
- **2-Alkoxy-1,4-pentadienes**
- Synthesis 802
- **Alkyl Aryl Ethers**
- Synthesis 159 (5690), 249 (5707), 914, 928
- Cleavage 80 (5672), 159 (5692), 638
- **Alkyl 2-Pyridyl Ethers**
- Synthesis 573
- **1-Alkynyl Ethers**
- Reactions 902, 904
- **Aryl Methoxymethyl Ethers**
- Synthesis 734
- **Aryl 2-Pyridyl Ethers**
- Synthesis 921
- **Aryl Quinolyl Ethers**
- Synthesis 923
- **Aryl 2,2,2-Trifluoroethyl Ethers**
- Synthesis 727
- ***o*-Bis[alkoxymethyl]-arenes**
- Synthesis 287
- ***o*-Bis[aryloxymethyl]-arenes**
- Synthesis 287
- **Crown Ethers**
- Synthesis 969
- **Dialkyl Ethers**
- Synthesis 670 (5858) (5859), 855 (5905), 928
- Oxidation 897
- **Methylthiomethyl Ethers**
- Synthesis 959 (5938)
- **Trityl Ethers**
- Synthesis 79 (5668)

● **Exaltolide®**

- Synthesis 65

● **Flavans**

- Ring Synthesis 618

● **Flavanones**

- Ring Synthesis 268

● **Flavenes**

- Synthesis 618

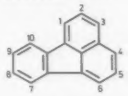
● **Flavones**

- Ring Synthesis 874

● **Floctafenine**

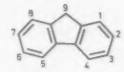
- Synthesis 54

● **Fluoranthene**



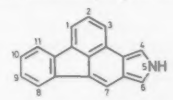
- Ring Synthesis 794

● **Fluorene**



- **1,2,3,9a-Tetrahydrofluorenes**
- Ring Synthesis 789
- **1,4,4a,9a-Tetrahydrofluorenes**
- Ring Synthesis 788

● **Fluoreno[1,9-*ef*]isoindole**



- **4,6-Dioxo-4,6-dihydro-5*H* Derivatives**
- Ring Synthesis 794

● ***C*-Fluoro Compounds**

- Synthesis 670 (5857)
- Reduction 425
- ***gem*-Difluoroalkanes**
- Synthesis 759 (5878)
- ***vic*-Difluoroalkanes**
- Synthesis 759 (5878)
- **Fluoroalkanes**
- Synthesis 667 (5850), 759 (5878)
- **Fluoroarenes**
- Reactions 215, 347, 348
- **α-Fluorocarbonyl Compounds**
- Synthesis 419 (5784)
- **Polyfluoro Compounds**
- Synthesis 360
- Reactions 347, 348
- **Trifluoromethyl Compounds**
- Synthesis 583 (5831), 932

● ***C*-Fluoro-*C*-iodo Compounds**

- **Fluoroiodoalkenes Type F–C=C–J**
- Synthesis 759 (5878)

● **Fluoronitro Compounds**

- ***vic*-Fluoronitroalkanes**
- Synthesis 759 (5878)

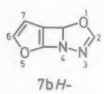
● **Fulvenes**

- **Pentafulvenes**
- Synthesis 799, 1091
- Diels-Alder Reactions 181, 182

● **Furan**

- **Furans**
- Ring Synthesis 52, 504 (5819)
- Cycloaddition Reactions 179, 180, 191, 198–203
- Ring Transformation 57
- **1,1-Difurylalkanes**
- Synthesis 136
- **2,3-Dihydrofurans**
- Synthesis 698
- **3-Oxo-2,3-dihydrofurans**
- Ring Transformation 876
- **2,5-Dialkoxy-2,5-dihydrofurans**
- Synthesis and Reactions 950
- **2-Oxo-2,5-dihydrofurans**
- Ring Synthesis 960 (5940)
- **Tetrahydrofurans**
- Halogenation 343 (5774)

● **Furo[3′,2′:3,4]azeto[2,1-*b*]-1,3,4-oxadiazole**



7b*H*-

- **4a,7a-Dihydro-7b*H* Derivatives**
- Ring Synthesis 203

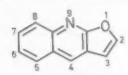
● **Furo[2,3-*d*]-1,2-oxazole**

- **3a,6a-Dihydrofuro[2,3-*d*]-1,2-oxazoles**
- Ring Synthesis 202

● **Furo[2,3-*d*]pyridazine**

- **5,7a-Dihydrofuro[2,3-*d*]pyridazines**
- Ring Synthesis 190

● **Furo[2,3-*b*]quinoline**



- **4-Oxo-2,3,4,9-tetrahydrofuro[2,3-*b*]quinolines**
- Ring Synthesis 528

● **Glafenine**
- Synthesis 54

● **Glutaconaldehyde**
- Synthesis and Reactions 589 (review)

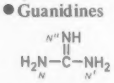
● **Glycerides**
- **Monoglycerides**
- Synthesis 54

● **Glycerol and Derivatives**
- Esterification 54

● **Glycosyl Derivatives**
see: Monosaccharides and Derivatives

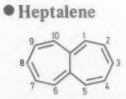
● **Glycosyl Esters**
- Synthesis 504 (5820)

● **Guanidines**



- Cyclization Reactions 379, 748
- **Cyanoguanidines**
see special heading

● **Heptalene**



- Ring Synthesis 187

● **Heteroaromatic *N*-Oxides**
- Deoxygenation 129, 1048 (4975)

● **Hexahelicenes**
- Ring Synthesis 780

● **Homobenzoquinones**
- Synthesis 821

● **Homogentisic Acid**
- Synthesis 111

● **Hydrazines**
- ***N′*-Acylhydrazinecarboxylic Esters**
- Cyclization Reactions 767 (5900)
- **Arylhydrazines**
- Cyclization Reactions 458
- Reduction 830
- ***N,N′*-Disubstituted Hydrazines**
- Oxidation 581 (5822)
- ***N*-Heterocyclic *C*-Hydrazino Compounds**
- Reduction 830
- **Hydrazinecarboxylic Acid Esters**
- Reactions 244, 876
- **1-Hydrazinoalkanephosphonic Esters**
- Synthesis and Reduction 1029
- **Hydrazinocyclobutenediones (Squaric Acid Hydrazides)**
- Synthesis 970, 971

● **Hydrazones**
- Synthesis 244
- **Aldehyde Hydrazones**
- Synthesis 912
- Regeneration of the Carbonyl Compound 499 (5806)
- **3-Alkylidenamino-4-oxo-3,4-dihydroquinazolines**
- Synthesis and Reactions 703
- **2-Arylhydrazonoalkanoic Esters**
- Cyclization Reactions 222
- ***N′*-(2-Benzoylaminobenzoyl)-hydrazones**
- Synthesis and Reactions 703
- **Benzyl Ketone Hydrazones**
- *C*-Alkylation 147
- **Cyclopentadienone Acylhydrazones**
- Synthesis 306
- **Cyclopentadienone Diacylhydrazones**
- Synthesis 307
- **2-Hydrazonoalkylmalonic Esters**
- Synthesis 148
- **Ketone Hydrazones**
- Oxidation 581 (5822)
- Reactions 585 (5837), 694
- Regeneration of the Carbonyl Compound 160 (5693), 499 (5806)
- **Sulfonylhydrazones**
- Reactions 78 (5666), 82 (5676), 164 (5706)

● **Hydrocarbons**
- Synthesis 79 (5667), 157 (5686), 802, 855 (5905)
- **Steroid Hydrocarbons**
- Synthesis 1040 (5947)

● **Hydroperoxides**
- **2-Alkenyl Hydroperoxides**
- Synthesis 790
- **1-Aryl-1-alkenyl Hydroperoxides**
- Synthesis 793

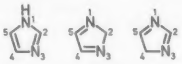
● **Hydroquinones**
see: Diphenols

● **Hydroximic Acid Halides**
- Cyclization Reactions 155, 252 (5717)

● **Hydroximic Acids (Hydroxamic Acids)**
- **Alkanehydroximic Acids**
- Synthesis 654
- ***N*-(2-Alkenyl)-hydroxamic Acids**
- Synthesis 761 (5884)

● **Hydroxylamines**
- ***N*-Acyl-*O*-alkylhydroxylamines**
- Synthesis 78 (5665), 521
- ***N*-Acyl-*O*-arylhydroxylamines**
- Synthesis and Reactions 461
- ***O*-Acylhydroxylamines**
- Synthesis 521
- **Alkylhydroxylamines**
- Synthesis 78 (5664)
- ***O*-Arylhydroxylamines**
- Synthesis 462
- ***N*-Hydroxyimides and *O*-Derivatives**
- Synthesis 278
- **α-Hydroxylaminocarboxylic Acid Derivatives**
- Cyclization Reactions 55

● **Imidazole**



2*H*- 4*H*-

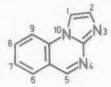
- **Imidazoles**
- Synthesis 489
- Anellation Reactions 191
- **4-Vinylimidazoles**
- Polymerization and Copolymerisation 794
- **2-Imino-2,3-dihydroimidazoles**
- Synthesis 1002
- **2-Oxo- and 2-Thioxo-2,3-dihydroimidazoles**
- Ring Synthesis 1001
- **Adamantane-Fused 2-Oxo-2,5-dihydroimidazoles**
- Ring Synthesis 473
- **4,5-Dihydroimidazoles**
- Dehydrogenation 489
- **4-Oxo-2-thioxotetrahydroimidazolidines**
- Ring Synthesis 311

● **Imidazo[4,5-*d*]pyridazine**

1*H*-

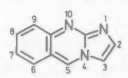
- Ring Synthesis 191

● **Imidazo[1,2-*a*]quinazoline**



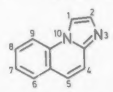
- **5-Oxo-2,3-dihydro and 5-Oxo-1,2,3,5-tetrahydro Derivatives**
- Ring Synthesis 524

● **Imidazo[3,2-*b*]quinazoline**



- **5-Oxotetrahydroimidazo[3,2-*b*]quinazolines**
- Ring Synthesis 524

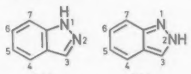
● **Imidazo[1,2-*a*]quinoline**



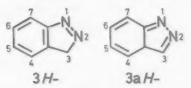
- **2-Methylene-5-oxo-1,2,3,5-tetrahydro-imidazo[1,2-*a*]quinolines**
- Ring Synthesis 529

● **Imines**
- Reactions 836
- Reduction 417 (5778)
- **Aldimines**
- Synthesis 479
- Cyclization Reactions 785, 786, 933
- Dehydrodimerization 1001
- **2,4-Alkadienimines**
- Synthesis 607, 608, 609
- ***N*-Alkylbenzaldimines**
- Synthesis 833
- ***N*-Benzylaldimines**
- α-Alkylation 811
- **1,2-Bis[2-alkoxyalkylimines]**
- Synthesis 371
- **1,2-Bis[4-oxo-4*H*-1-benzopyran-3-ylmethylenamino]-ethanes**

- Synthesis 701
- *vic*-Diimines
- Synthesis 370, 1001
- Reactions 1001
- Hexafluoroacetone Imine
- Synthesis 95
- Imines of Enolizable Aldehydes and Ketones
- Reactions 158 (5689), 673 (5867)
- Ketimines
- *C,N*-Chlorocarbonylation 571
- Cyclization Reactions 414
- Reactions 87, 585 (5836)
- *N*-Substituted Imines
- *N*-Silylation 630
- **Iminium Salts**
- *N,N'*-Dibenzylidenealkanediaminium Salts
- Synthesis and Reactions 304
- **Indazole**

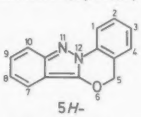


1*H*- 2*H*-



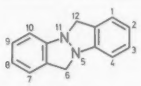
3*H*- 3a*H*-

- 3-Oxo-2,3-dihydro-1*H*-indazoles
- Ring Synthesis 787
- **Indazolo[2,3-*a*][3,1]benzoxazine**



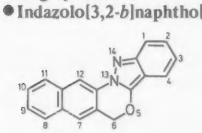
5*H*-

- 5-Oxo-5*H* Derivatives
- Ring Synthesis and Transformation 381
- **Indazolo[2,1-*a*]indazole**



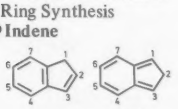
6*H*,12*H*-

- 6,12-Dioxo-6*H*,12*H* Derivatives
- Ring Synthesis 381
- **Indazolo[3,2-*b*]naphtho[2,3-*d*][1,3]oxazine**



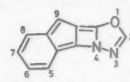
6*H*-

- 6-Oxo-6*H* Derivatives
- Ring Synthesis 382
- **Indene**

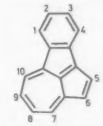


2*H*-

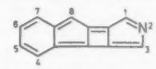
- Indenes
- Ring Synthesis 222
- Cycloaddition Reactions 174, 175, 176, 773, 788
- Oxidation 622
- Oxygenation 788
- 4,5,6,7-Tetrahydro-3a*H*-indenes
- Ring Synthesis 184
- Indanes
- Ring Synthesis 222, 267, 772
- 2,3,3a,4,7,7a-Hexahydroindenes
- Ring Synthesis 335 (5748)
- 2,3,4,5,6,7-Hexahydroindenes
- Ring Synthesis 251 (5715), 337
- 2,4,5,6,7,7a-Hexahydroindenes
- Ring Synthesis 408
- 1-Oxo-2,3,3a,4,5,6-hexahydroindenes
- Ring Synthesis 757
- 1-Oxo-2,3,4,5,6,7-hexahydroindenes
- Ring Synthesis 957 (5931)
- 2-Oxo- and 2,7-Dioxo-2,4,5,6,7,7a-hexahydroindenes
- Ring Synthesis 957 (5930)
- Octahydroindenes
- Ring Synthesis 389
- **Indeno[2',1':3,4]azeto[2,1-*b*]-1,3,4-oxadiazole**



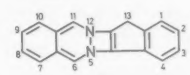
- 4a,9,9a,9b-Tetrahydro Derivatives
- Ring Synthesis 203
- **Indeno[1,2,3-*cd*]azulene**



- Ring Synthesis 189
- **Indeno[1',2']cyclobuta[*c*]pyrrole**

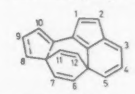


- 1,2,3,3a,3b,8,8a,8b-Octahydro Derivatives
- Ring Synthesis 175
- **Indeno[1',2':4,3][1,2]diazeto[1,2-*b*]phthalazine**

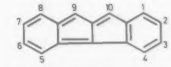


13*H*-

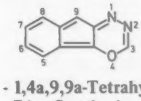
- 6,11-Dioxo-4b,6,11,12a-tetrahydro-13*H* Derivatives
- Ring Synthesis 773
- **Indeno[1,7-*ef*]-6,8a-ethenoazulene**



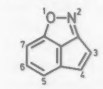
- 1,2,3,4,5,8,9,10-Octahydro Derivatives
- Ring Synthesis 167
- **Indeno[1,2-*a*]indene**



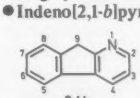
- 4b,9,9a,10-Tetrahydroindeno[1,2-*a*]indenes
- Ring Synthesis 177
- **Indeno[2,1-*e*][1,3,4]oxadiazine**



- 1,4a,9,9a-Tetrahydro Derivatives
- Ring Synthesis 773
- **Indeno[1,7-*ed*]-1,2-oxazole**

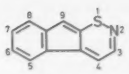


- 3,4,4a,5,6,7,7a,7b-Octahydro Derivatives
- Ring Synthesis and Cleavage 757
- **Indeno[2,1-*b*]pyridine**

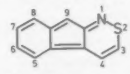


9*H*-

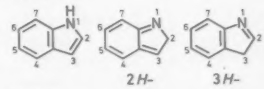
- Ring Synthesis 789
- **Indeno[1,2-*e*]-1,2-thiazine**



- 2,9-Dihydroindeno[1,2-*e*]-1,2-thiazine 1-Oxides
- Ring Synthesis 789
- **Indeno[2,1-*c*][1,2]thiazine**



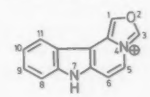
- 1,3,9,9a-Tetrahydroindeno[2,1-*c*][1,2]thiazine 2-Oxides
- Ring Synthesis 789
- **Indole**



2*H*- 3*H*-

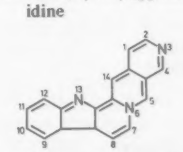
- Indoles
- Ring Synthesis 222, 341 (5768), 343 (5773), 365, 663, 676 (5875), 960 (5941), 1047 (5971)
- Anellation Reactions 190, 790
- Ring Cleavage 678
- Ring Transformation 190
- Substitution Reactions 729
- 3-(1-Aminoalkyl)-indoles
- Synthesis 729
- 4-Aminomethylene-3*H*-indolium Salts
- Synthesis 729
- 3a,7a-Dihydroindoles
- Ring Synthesis 192
- 2-Imino-3-oxo-2,3-dihydroindoles
- Ring Synthesis 526
- 2-Oxo-2,3-dihydroindoles
- Ring Synthesis 1047 (5971)
- Indirect Dehydration 365
- **Indolizine**

- Indolizines
- Alkylsulfenylation 886
- Anellation Reactions 193, 791
- **Indolo[2,3-*g*][1,3]oxazolo[4,3-*a*]isoquinoline**

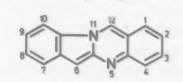


7*H*-

- 7*H*-Indolo[2,3-*g*][1,3]oxazolo[4,3-*a*]isoquinolinium Salts
- Ring Synthesis 384
- **Indolo[2',3':3,4]pyrido[1,2-*b*][2,7]naphthyridine**



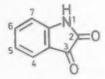
- 5-Oxo-5,7,8,13-tetrahydro Derivatives
- Ring Synthesis 373
- **Indolo[2,1-*b*]quinazoline**



- 6,12-Dioxo-6,12-dihydroindolo[2,1-*b*]quinazolines
- Ring Synthesis 533
- 5,5a,6,12-Tetrahydroindolo[2,1-*b*]quinazolines
- Ring Synthesis 521
- ***C*-Iodo Compounds**

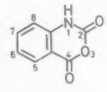
- Reduction 425
- *gem*-Diiodocyclopropanes
- Reduction 445
- Iodoalkanes
- Synthesis 667 (5850), 865
- Reactions 161 (5697)
- 1-Iodo-1-alkenes
- Reactions 945
- 3-Iodo-2-alkenols
- Synthesis and Reactions 259 (5738)
- 1-Iodo-1-alkynes
- Synthesis 672 (5864)
- Iodoarenes
- Synthesis 486, 572, 582 (5826)
- α-Iodocarbonyl Compounds
- Synthesis 500 (5808), 592
- Iodoflavans
- Synthesis 618
- Iodomethylarenes
- Synthesis 853
- Iodomethyl Compounds
- Synthesis 914
- Iodomethylsilanes
- Synthesis 319
- Iodopyridines
- Synthesis 596

● Isatins and Derivatives



- Ring Synthesis 526, 533
- Anellation Reactions 533

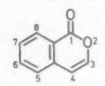
● Isatoic Anhydrides



- Synthesis and Reactions 505 (review)
- Ring Cleavage 54, 63, 512 (review), 680, 719

● Islandicine
- Synthesis 172

● Isocoumarins



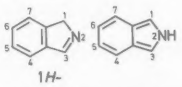
- Ring Synthesis 73

● Isocyanates
- Synthesis 255 (5725), 866
- Acyl Isocyanates
- Synthesis 89
- Cyclization Reactions 785, 792, 793
- Reactions 92
- Adamantyl Isocyanates
- Synthesis and Reactions 473
- Alkyl Isocyanates
- Synthesis 586 (5839)
- Cyclization Reactions 349
- 1-Azidoalkyl Isocyanates
- Synthesis 102
- Benzyl Isocyanates
- Synthesis 104
- *gem*-Bis[isocyanato]-alkanes
- Synthesis 102
- Chlorocarbonyl Isocyanate
- Synthesis 99
- *o*-Chlorocarbonylphenyl Isocyanate
- Synthesis and Cyclization Reactions 531
- Chlorosulfonyl Isocyanate
- Cyclization Reactions 785
- 1,1-Dihaloalkyl Isocyanates
- Synthesis 85 (review)
- 1-Halo-1-alkenyl Isocyanates
- Synthesis 89, 91
- Reactions 100
- 1-Haloalkyl Isocyanates
- Synthesis 85 (review), 571
- Cyclization Reactions 96–104, 571
- Reactions 95 (review)
- 1-Isocyanatoalkanephosphonic Esters
- Synthesis 100
- 1-Phosphonylaminoalkyl Isocyanates
- Synthesis 104
- Silyl Isocyanates
- Synthesis 460
- Thioacyl Isocyanates
- Reactions without Cyclization 92
- Trichloromethyl Isocyanate
- Synthesis 85
- Trifluoromethyl Isocyanate
- Synthesis 85, 91, 94

● Isocyanides
- α-Isocyanocarboxylic Acid Derivatives
- Synthesis 69
- *C*-Alkylation 768 (5902)
- Hydrolysis 768 (5902)
- Reduction 69
- 1-Sulfonylcyclobutyl Isocyanides
- Synthesis and Reactions 325
- Sulfonylmethyl Isocyanides
- Cyclization Reactions 256 (5729), 325

● Isoindigo and Derivatives
- Synthesis 531

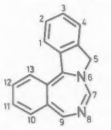
● Isoindole



1*H*-

- *N*-Alkyl-1-hydroxy-3-oxo-1,3-dihydroisoindoles
- Synthesis and Anellation Reactions 404
- 1,3-Diimino-1,3-dihydroisoindoles
- Ring Synthesis 287
- 1,3-Dioxo-1,3-dihydroisoindoles
- Ring Synthesis 194

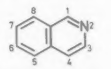
● Isoindolo[1,2-*a*][2,4]benzodiazepine



5*H*-

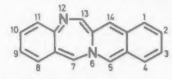
- 5-Oxo-7,8,9,13b-tetrahydro-5*H* Derivatives
- Ring Synthesis 404

● Isoquinoline



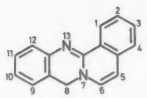
- Isoquinolines
- Ring Synthesis 70, 842
- Isoquinolinium Salts
- Cycloaddition Reactions 207
- 1-Oxo-1,2-dihydroisoquinolines
- Ring Synthesis 845
- 3-Oxo-2,3-dihydroisoquinolines
- Cycloaddition Reactions 207, 208
- 3,4-Dihydroisoquinolines
- Ring Synthesis 1021
- Anellation Reactions 845, 996
- Reduction 1021
- 1,2,3,4-Tetrahydroisoquinolines
- Synthesis 1021
- 1-Thioxo-1,2,3,4-tetrahydroisoquinolines
- Reactions 1020

● Isoquino[3,2-*c*][1,4]benzodiazepine



- Hydro Derivatives
- Ring Synthesis 520

● Isoquino[1,2-*b*]quinazoline



8*H*-

- 8-Oxo-5,6-dihydro-8*H*-isoquino[1,2-*b*]-quinazolines
- Ring Synthesis 523

● Isothiocyanates
- Reactions 749
- Acyl Isothiocyanates
- Synthesis 300
- 1-Alkenyl Isothiocyanates
- Synthesis 254 (5723)
- 2-Alkenyl Isothiocyanates
- Synthesis 254 (5723), 300
- ω-Aminoalkyl Isothiocyanates
- Synthesis and Cyclization Reactions 311
- Aryl Isothiocyanates
- Synthesis 359
- 2-Haloalkyl Isothiocyanates
- Synthesis 359
- Silyl Isothiocyanates
- Synthesis 460
- Sulfonyl Isothiocyanates
- Synthesis 300

● Jasmone and Relatives
- Synthesis 414

● Ketene Derivatives
- Acylketene *S,N*-Acetals
- Synthesis and Cyclization Reactions 748
- Alkoxycarbonylcyanoketene *S,S*-Acetals
- Cyclization Reactions 748
- 1-Amino-1-halo-1-alkenes
- Reactions 1045 (5963)
- 2-Aminoketene *S,S*-Acetals
- Synthesis 609
- Ketene *S,S*-Acetal *S*-Oxides
- Synthesis 424 (5799)
- Reactions 424 (5799), 736
- Ketene *S,S*-Acetals
- Synthesis 163 (5702), 253 (5720), 424 (5800), 503 (5816), 587 (5842), 907
- Reactions 587 (5841)
- Reduction 424 (5800)
- Ketene *S*-Acyloxymethyl *S*-Alkyl Acetals
- Synthesis and Reactions 736
- Ketene 2-Alkenyl Alkyl Acetals
- Synthesis and Reactions 342 (5770)
- Ketene *S*-Alkyl *O*-Boryl Acetals
- Reactions *in situ* 500 (5809)
- Ketene *O*-Alkyl *O*-Silyl Acetals
- Synthesis 766 (5898), 1043 (5956)
- Reactions 583 (5830), 766 (5898), 1043 (5956)
- Ketene *O,O*-Disilyl Acetals
- Synthesis and Reactions 958 (5933)
- Ketene Imines
- Cyclization Reactions 787
- Vinylketene *O*-Alkyl *O*-Silyl Acetals
- Reactions 497 (5802)

● Ketenes
- Cyclization Reactions 783, 785, 786
- Dihaloketenes
- Reactions without Cyclization 253 (5721)

● Ketones
- Synthesis 36, 126, 142, 157 (5685), 223, 334 (5747), 417 (5778), 581 (5822), 657, 659, 662, 691, 673 (5891), 849, 863, 864, 877, 1009
- Carbonyl Olefination 79 (5669), 158 (5687), 252 (5718), 253 (5720), 424 (5798), 498 (5803), 856 (5908), 857 (5913)
- Condensation Reactions 41, 297, 799, 806, 836, 901
- *C–C* Coupling Reactions 420 (5789), 584 (5832), 585 (5833)

- Cyanohydrin Synthesis 861
- Cyclization Reactions 55, 331, 585 (5835), 870
- Thioacetalization 866
- Reduction 157 (5686), 249 (5708), 672 (5863), 855 (5905)
- 2-Acetylfurans
- Synthesis and Reactions 136
- 3-Acylcephams
- Synthesis 453
- Acyloxiranes
- Synthesis 895
- 1,3-Alkadienyl Ketones
- Synthesis 339 (5762), 652
- 1,4-Alkadienyl Ketones
- Synthesis 652
- 1-Alkenyl 4-Alkenyl Ketones
- Synthesis and Cyclization Reactions 582 (5825)
- 1-Alkenyl Ketones
- Synthesis 41, 160 (5695), 161 (5698), 334 (5745), 335 (5749), 336 (5752), 353, 392, 647, 669 (5855), 671 (5861), 1044 (5960)
- Arylselenylation 664
- *C*–*C* Coupling Reactions 81 (5674), 161 (5696), 291, 317, 338 (5759), 420 (5789), 502 (5915), 671 (5861), 752, 857 (5911), 1040 (5949)
- Cyanohydrin Synthesis 863
- Cyclization Reactions 198, 453
- Cyclopropanation 34, 642, 762 (5888)
- Halogenation 143
- Phosphonylation 338 (5758)
- Sulfenylation 503 (5817), 1042 (5953)
- 2-Alkenyl Ketones
- Synthesis 252 (5717), 353, 673 (5865)
- Epoxidation 37
- 3-Alkenyl Ketones
- Synthesis 671 (5861), 1040 (5949)
- 4-Alkenyl Ketones
- Synthesis 857 (5911)
- 1-Alkenyl 3-Nitroalkyl Ketones
- Synthesis and Reactions 27
- 2-Alkoxy-1-alkenyl Ketones
- Synthesis 1013
- Reduction 118
- Alkyl Aryl Ketones
- Synthesis 140, 352, 498 (5805), 646, 856 (5909), 959 (5936)
- Dehydration 417 (5779)
- Reduction 760 (5882)
- Self-Condensation 41
- Sulfenylation 412
- Alkyl Ketones, General
- Synthesis 251 (5714), 333 (5742)
- Cyclization Reactions 366
- Halogenation 143
- *sec*-Alkyl Ketones
- Synthesis 499 (5806)
- Alkyl 2-Methylphenyl Ketones
- Synthesis 856 (5909)
- Alkyl Styryl Ketones
- Synthesis 734
- 1-Alkynyl Aryl Ketones
- Cyclization Reactions 29
- 1-Alkynyl Ketones
- Amination 880
- *C*–*C* Coupling Reactions 334 (5745), 584 (5834)
- Cyclization Reactions 115
- 2-Amino-1-alkenyl Ketones
- Synthesis 390, 669 (5855), 880
- Deamination 1044 (5960)
- Transamination 669 (5855)
- 2-Aminoalkyl Ketones
- Reactions 895
- 2-Aminobenzophenones
- Synthesis 677 (review)
- *o*-Aminoaryl Ketones
- Synthesis 526
- 2-Arylalkyl Ketones
- Synthesis 291
- Aryl Cycloalkyl Ketones
- Synthesis 350
- Aryl Halomethyl Ketones
- Oxidation 564
- Reactions 844
- Aryl Sulfinylmethyl Ketones
- Reactions 880
- 1-Arylthioalkyl 1,1-Diarylthioalkyl Ketones
- Synthesis 919
- 1-(1-Arylthioalkyl)-2-hydroxyalkyl Ketones
- Synthesis 420 (5789)
- Benzocycloheptatrienones
- Synthesis 208
- Bicyclic Ketones
- Synthesis 251 (5715)
- Bis[1-alkenyl] Ketones
- Synthesis 649
- Reactions 27
- Bis[1-mercaptoalkyl] Ketones and *S*-Derivatives
- Synthesis 918
- Bromomethyl Ketones
- Synthesis 582 (5827)
- Chalcones
- Synthesis 647
- Aziridine Formation 650
- 2-Chloroethynyl-1-tetralones
- Synthesis 956 (5926)
- 4-Chromanones
- Synthesis 725
- 2-Cyanocycloalkanones
- Synthesis 252 (5716)
- Cyclic Diaryl Ketones
- Synthesis 455
- Cyclic α-(1,2-Dichlorovinyl)-ketones
- Synthesis 956 (5926)
- Cyclic α-Nitroketones
- Synthesis and Reactions 261 (review)
- Cycloalkanones
- Synthesis 27, 44, 164 (5706), 400
- Anellation Reactions 337 (5754)
- Cyclization Reactions 289, 503 (5818)
- Diazo-Group Transfer 368
- Nitration 264
- 2-Cycloalkenones
- Synthesis 297
- Diels-Alder Reactions 335 (5748)
- Reduction 400
- Cyclobutanones
- Synthesis 783
- Cyclohexanones and Derivatives
- Synthesis 763 (5889)
- 2-Cyclohexenones
- Synthesis 339 (5760), 583 (5829)
- 3-Cyclohexenones
- Synthesis 339 (5760)
- 2-Cyclopentenones
- Synthesis 337 (5754), 414, 423 (5796), 583 (5829), 957 (5929) (5930)
- Cyclopropyl Ketones
- Synthesis 34
- 3,3-Dialkoxyalkyl Ketones
- Synthesis 673 (5867)
- 4,4-Dialkoxyalkyl Ketones
- Synthesis 673 (5867)
- Cyclization Reactions 583 (5829)
- Dialkyl Ketones
- Synthesis 81 (5674), 160 (5693), 161 (5697), 162 (5700), 351, 360, 734, 761 (5885), 941, 959 (5936)
- Alkylation 160 (5693)
- Sulfenylation 412
- Diaryl Ketones
- Synthesis 140, 347, 352, 353, 455, 646, 784
- Dibenzosuberones
- Synthesis 455
- 1,2-Dihaloalkyl Ketones
- Synthesis 143
- Enolizable Ketones
- Synthesis 499 (5807)
- *C*–*C* Coupling Reactions 158 (5688), 161 (5698), 420 (5788), 669 (5854), 895, 956 (5926), 959 (5939)
- Cyclization Reactions 52, 960 (5941)
- Halogenation 487
- Indirect α-Alkylation and α-Alkylidenation 336 (5752), 499 (5806)
- *O*-Silylation 1047 (5972)
- *O*-Silylation + Oxidation 960 (5940)
- *C*-Sulfenylation 918
- *O*-Sulfonylation 283
- 1-Fluoroalkyl Ketones
- Synthesis 419 (5784)
- 2-Halo-1-alkenyl Ketones
- Reactions 880
- 1-Haloalkyl Ketones
- Synthesis 143, 498 (5805), 581 (5823), 582 (5827), 583 (5828)
- Epoxide Formation 83 (5680)
- Hexahydro-1-indanones
- Synthesis 757
- 2,3,3a,4,5,6-Hexahydro-1-indenones
- Synthesis 757
- 1-(1-Hydroxyalkyl)-1-alkenyl Ketones
- Synthesis 1042 (5953)
- 1-Hydroxyalkyl Ketones
- Synthesis 37, 498 (5805)
- Reduction 333 (5742)
- Reactions 36
- 2-Hydroxyalkyl Ketones and *O*-Derivatives
- Synthesis 158 (5688) (5689), 333 (5744), 561
- 2-Hydroxyalkyl 1-Siloxyalkyl Ketones
- Diastereoselective Synthesis and Oxidative Fragmentation 959 (5937)
- Hydroxymethyl Ketones and *O*-Derivatives
- Synthesis 958 (5933)
- 2-(1-Imidazolyl)-1-alkenyl Ketones
- Synthesis 880
- 1-Indanones
- Reduction-Dehydration 622
- 2-Indanones
- Synthesis 622
- Medium-Ring Cycloalkanones
- Synthesis 765 (5895)
- 2-Mercapto-1-alkenyl Ketones and *S*-Derivatives
- Reactions 390, 423 (5797), 1014
- Reduction 959 (5936)
- 3-Mercapto-1-alkenyl Ketones and *S*-Derivatives
- Synthesis 503 (5817)
- 4-Mercapto-1-alkenyl Ketones and *S*-Derivatives
- Synthesis 497 (5802)
- 1-Mercaptoalkyl Ketones and *S*-Derivatives
- Synthesis 412, 499 (5807), 500 (5808), 919
- 2-Mercaptoalkyl Ketones and *S*-Derivatives
- Synthesis 336 (5752)
- Oxidation 336 (5752)
- Oxidative Desulfenylation 392
- Reduction 336 (5752)
- Mercaptomethyl Ketones and *S*-Derivatives
- Synthesis 958 (5933)
- Methyl Ketones
- Addition or Condensation 160 (5695)
- 1-Nitroalkyl Ketones
- Synthesis 256 (5729), 274
- 2-Nitrocycloalkanones
- Ring Cleavage 273
- Pentafluorophenyl Ketones
- Synthesis 352
- Polyfluorinated Dialkyl Ketones
- Synthesis 359, 360
- 2-Selenoalkyl Ketones and *Se*-Derivatives
- Synthesis 665
- Sterically Hindered Ketones
- Synthesis 498 (5805)

- 2-Sulfinyl-1-alkenyl Ketones and *S*-Derivatives
- Reactions 390, 1014
- 1-Tetralones
- Reduction-Dehydration 622
- 2-Tetralones
- Synthesis 622
- Tricycloalkanones
- Synthesis 74

● Lactams
- Synthesis 960 (5942)
- *N*-(1-Alkenylation) 337 (5755)
- Reductive Alkylation 421 (5790)
- Alkanelactams
- Alkoxylation 315
- 3-Alkanelactams
- Synthesis 258 (5734), 778
- 6-Alkanelactams
- Synthesis 222, 274
- 5-Alkene-4-lactams
- Synthesis 767 (5900)
- 6-Alkene-5-lactams
- Synthesis 767 (5900)
- *N*-(1-Alkenyl)-lactams
- Synthesis 337 (5755)
- ω-Alkoxyalkanelactams
- Synthesis 315
- 2-Alkylidene-3-alkanelactams
- Synthesis 587 (5843)
- *N*-Alkyllactams
- Reduction 695
- 2-Benzylidene-3-alkanelactams
- Synthesis 247
- Cephems
- Synthesis 453
- α-Hydroxylactams
- Synthesis 229
- 2-Methylene-3-alkanelactams
- Synthesis 933
- 5,5-Spiro-substituted 5-Pentanelactams
- Synthesis 271
- *N*-Substituted 3-Alkanelactams
- Synthesis 786

● Lactim Derivatives
- *O*-Alkyllactims
- Reactions 190, 845

● Lactones
- Cleavage 586 (5839), 864
- Reactions 1015
- 3-Alkanolides
- Reactions 766 (5899)
- 4-Alkanolides
- Synthesis 50, 259 (5737), 588 (5846), 766 (5899)
- 15-Alkanolides
- Synthesis 65
- 2-Alken-4-olides
- Synthesis 259 (5738), 544, 588 (5845), 762 (5886), 960 (5940)
- Reactions 1048 (5974)
- 2-Alken-5-olides
- Synthesis 500 (5810)
- 2-Alkyl-2-alken-4-olides
- Synthesis 587 (5844)
- 2-Alkylidene-4-alkanolides
- Synthesis 258 (5736), 588 (5846)
- 3-Aroyl-4-alkanolides
- Synthesis 826
- 3-Aroyl-3-hydroxymethyl-4-alkanolides
- Synthesis 826
- Arylselenyl-4-alkanolides
- Synthesis 501 (5811), 666
- Arylselenyl-substituted Lactones
- Synthesis 666
- 3-Arylthio-2-(1-hydroxyalkyl)-4-alkanolides
- Synthesis and Reactions 1048 (5974)
- 2,3-Benzo-fused Lactones
- Synthesis 344 (5775)
- Bicyclic Lactones
- Synthesis 501 (5811)
- 2-Halo-4-alkanolides
- Synthesis 676 (5874)
- Hydrocoumarins
- Synthesis 395
- 2-(1-Hydroxyalkyl)-2-alken-4-olides
- Synthesis 1048 (5974)
- Macrocyclic Lactones
- Synthesis 502 (5814), 676 (5876)
- 2-Methylene-4-alkanolides
- Synthesis 501 (5812), 588 (5845), 864
- 12-Oximino-15-pentadecanolides
- Synthesis and Reactions 65
- 5-Oxo-9-alkanolides
- Synthesis 998
- 2-Oxo-2,3-dihydro-1-benzofurans
- Synthesis 111
- 2-Oxo-2,3,3a,4,5,6-hexahydro-1-benzofurans
- Synthesis 395
- 2-Oxo-15-pentadecanolides
- Synthesis and Reactions 65
- Phthalides
- Synthesis 72, 344 (5775), 882
- Carbonyl Olefination 1016
- Polysubstituted 4-Alkanolides
- Synthesis 698
- Steroidal Spiro-γ-lactones
- Synthesis 289
- 3-Sulfonyl-4-alkanolides
- Synthesis 860 (5920)
- 4,5,6,7-Tetrahydrophthalides
- Synthesis 544
- 2,3,4-Trialkoxy-2-buten-4-olides
- Synthesis 991

● Malodinitriles
- Acylmalodinitriles
- Synthesis 256 (5729)
- Alkylidenemalodinitriles
- Synthesis 297
- Cyclization Reactions 297, 366, 787
- 5-Amino-2,4-alkadienylmalodinitriles
- Synthesis 608
- Aminomalodinitrile Tosylate
- Synthesis 801
- Diaminomethylenemalodinitriles
- Reactions 620
- Malodinitrile
- Cyclization Reactions 366
- 3-Oxo-4-alkenylmalodinitriles
- Synthesis and Reactions 27

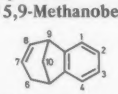
● Malonic Acid Esters
- Cyclization Reactions 969
- Dealkoxycarbonylation 336 (5751)
- 1,3-Dithianylation 164 (5705)
- Acylamino-(acylthio)-malonic Esters
- Synthesis 323
- Acylaminomalonic Esters
- Synthesis and Reactions 323
- Acylmalonic Esters
- Synthesis 256 (5729)
- Alkoxyaminomalonic Esters
- Synthesis 323
- Alkyl-(α-benzylidenaminobenzyl)-malonic Esters
- Synthesis 833
- Alkylidenemalonic Esters
- Addition Reactions 318
- Alkylmalonic Esters
- Synthesis 318, 502 (5813)
- 2-Amino-2-cyanoalkylmalonic Esters
- Synthesis 415
- Aminohalomalonic Esters
- Synthesis and Reactions 323
- Dialkyl Malonates
- Halogenation 143
- Sulfenylation 412
- 1,2-Dichlorovinylmalonic Esters
- Synthesis 956 (5926)
- Halomalonic Esters
- Synthesis 143
- 2-Hydrazonoalkylmalonic Esters
- Synthesis 148
- Malonic Acid Monoesters
- *C*-Acylation 82 (5678), 159 (5691)
- Mercaptomalonic Esters and *S*-Derivatives
- Synthesis 412
- 3-Oxo-4-alkenylmalonic Esters
- Synthesis and Reactions 27
- 4-Oxo-2-butylmalonic Esters
- Synthesis 856 (5910)

● Metal Complexes
- Alkene-Palladium Complexes
- Synthesis and Reactions 498 (5804)
- Diazene-Palladium Complexes
- Carbonylation 787
- Porphyrin Complexes of Cu, Fe, Mn, Pd, Zn
- Synthesis 537
- Pyridine-Palladium(II)-Chloride
- Reactions 378

● Metal Enolates
- Reactions 413

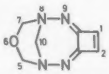
● *C*-Methyl Compounds
- Synthesis 802, 1039 (5944)

● 5,9-Methanobenzocycloheptene



6,9-Dihydro-5*H*-
- 6,9-Dihydro Derivatives
- Ring Synthesis 166

● 4,8-Methanocyclobuta[*e*][1,3,4,7,8]oxatetrazonine



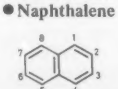
- 1,2-Dioxo-1,2,3,9-tetrahydro Derivatives
- Ring Synthesis 971

● Monosaccharides and Derivatives
- Synthesis and Reactions of Protected Derivatives 13
- Aminosugars
- *N*-Protection 15
- 3-Azido-3-deoxyfuranoses
- Synthesis 557
- Dehydrosugars
- Synthesis 201
- 3,5-Diazido-3,5-dideoxyfuranoses
- Synthesis and Reactions 559
- m,n-Dideoxy-m,n-didehydrofuranosides and -pyranosides
- Synthesis 47, 636
- 3,5-Di-*O*-sulfonylfuranoses
- Synthesis and Reactions 559
- *O*-Dithiocarbonate Derivatives
- Synthesis 714
- Epoxysugars
- Deoxygenation 636
- Methyl 2,6-Dideoxyhexopyranosides
- Synthesis 1037
- Methyl 6-Iodo-2,6-dideoxyhexopyranosides
- Synthesis and Reduction 1037
- Organoboron-Protected Sugars and Glycosyl Halides
- Synthesis 935, 936
- Permethylated Monosaccharides
- Synthesis 954
- *O*-Sulfonylfuranoses
- Synthesis and Reactions 558

● (+)- and (−)-Myrtenol
- Synthesis 456

● Naphthacene
see: Tetracene

● Naphthalene



- Naphthalenes

- Ring Synthesis 184, 193, 203, 689, 771, 776, 778, 782
- Anellation Reactions 173
- 1,2-Dihydronaphthalenes
- Ring Synthesis 167, 419 (5785), 782, 783
- Synthesis 622
- Diels-Alder Reactions 774
- Oxidation 622
- Oxygenation 789
- 1,2,3,4-Tetrahydronaphthalenes (Tetralins)
- Ring Synthesis 395, 771, 774, 775
- 1,2,3,4,4a,8a-Hexahydronaphthalenes
- Ring Synthesis 194
- 1,2,3,4,4a,5,6,7-Octahydronaphthalenes
- Ring Synthesis and Anellation Reactions 582 (5825)
- 1-Oxo-1,2,3,4,5,6,7,8-octahydronaphthalenes
- Synthesis 765 (5896)
- 1,4-Dioxo-1,2,3,4,4a,5,6,7-octahydronaphthalenes
- Synthesis 1024
- 1,7-Dioxo-1,2,3,4,4a,5,6,7-octahydronaphthalenes
- Reductive Alkylation 1041 (5952)
- Decahydronaphthalenes (Decalins)
- Ring Synthesis 389
- 1-Decalones
- Anellation Reactions 957 (5929)
- 1,4-Dioxo- and 1,4,5-Trioxodecalins
- Ring Synthesis 1024
- 1,7-Dioxodecalins
- Synthesis 1041 (5952)

● **Naphthalene-1,4-imine**

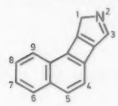
1,4-Dihydro-

- Ring Synthesis and Cleavage 193

● ***o*-Naphthazarin**

- Synthesis 753

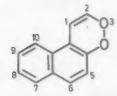
● **Naphtho[1′,2′]cyclobuta[*c*]pyrrole**



1*H*-

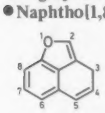
- 2,3,3a,9b-Tetrahydro-1*H* Derivatives
- Ring Synthesis 175

● **Naphtho[2,1-*c*][1,2]dioxin**



- 2,4a-Dihydro Derivatives
- Ring Synthesis 790

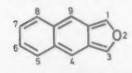
● **Naphtho[1,8-*bc*]furan**



3*H*-

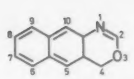
- 4,5-Dihydro-3*H*-naphtho[1,8-*bc*]furans
- Ring Synthesis 236

● **Naphtho[2,3-*c*]furan**



- Naphtho[2,3-*c*]furans
- Anellation Reactions 203
- 1-Oxo-1,3-dihydronaphtho[2,3-*c*]furans
- Ring Synthesis 779

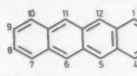
● **Naphtho[2,3-*d*][1,3]oxazine**



4*H*-

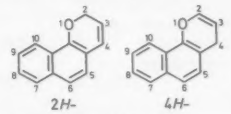
- 4-Oxo-4*H* Derivatives
- Ring Synthesis and Transformation 382
- 2,4-Dioxo-1,2-dihydro-4*H* Derivatives
- Ring Synthesis 511

● **Naphtho[2,3-*g*]phthalazine**



- Ring Synthesis 689

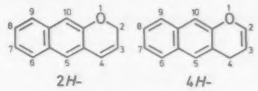
● **Naphtho[1,2-*b*]pyran**



2*H*- 4*H*-

- 2-Oxo-2*H*-naphtho[1,2-*b*]pyrans
- Ring Synthesis 716

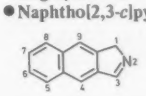
● **Naphtho[2,3-*b*]pyran**



2*H*- 4*H*-

- 2-Oxo-2*H*-naphtho[2,3-*b*]pyrans (Benzocoumarins)
- Ring Synthesis 777

● **Naphtho[2,3-*c*]pyrrole**



1*H*-

- 1-Oxo-2,3-dihydro Derivatives
- Ring Synthesis 779
- 1,3-Dioxo-2,3-dihydro-1*H* and 1,3-Dioxo-2,3,3a,4-tetrahydro-1*H* Derivatives
- Ring Synthesis 780, 781

● **Nitric Acid Esters**

- 2-Aminoalkyl Nitrates
- Synthesis and Reactions 818

● **Nitrile Oxides**

- Cyclization Reactions 202
- 5-Alkenenitrile Oxides
- Generation and Cyclization Reactions 757

● **Nitriles**

- Synthesis 657, 659, 703, 958 (5934), 1006, 1046 (5967)
- Hydration to Carboxamides 243, 349
- Reactions with Phosgene and Carbonyl Fluoride 89
- Reduction 802
- Acetonitrile
- Cyclization Reactions 900
- 2-Acyl-2-alkenenitriles
- Cyclization Reactions 839
- Alkanenitriles
- Synthesis 83 (5681), 1007, 1039 (5946)
- Amidinoethylation 893
- Cyclization Reactions 1022
- 2-Alkenenitriles
- Synthesis 150, 160 (5694), 252 (5718), 297
- Addition Reactions 317
- Cyclization Reactions 170, 174, 192, 198, 204, 208, 811
- Cyclopropanation 642
- Reduction 1039 (5946)
- 3-Alkenenitriles
- Synthesis 160 (5694), 1007
- 2-Alkynenitriles
- Synthesis 150
- Cyclization Reactions 168
- 5-Amino-2,4-alkadienenitriles
- Synthesis 601
- 2-Aminoalkanenitriles
- Synthesis 764 (5894)
- Dehydrocyanation 320
- Hydrolysis 414
- 2-Amino-2-alkenenitriles
- Synthesis and Reactions 414
- 2-Amino-1-arylpropenenitriles
- Synthesis and Reactions 1045 (5964)
- 2-Aminobenzonitriles
- Synthesis 57
- Cyclization Reactions 311
- 2-Amino-5-oxoalkanenitriles
- Synthesis 414
- 2-Amino-5-siloxy-4-alkenenitriles
- Synthesis and Reactions 414
- 1-Arylalkanenitriles
- Cyclization Reactions 663
- 2-Arylalkanenitriles
- Synthesis 162 (5701)
- 1-Aryl-2-alkoxypropenenitriles
- Synthesis and Reactions 1045 (5964)
- Arylglyoxylonitriles (Aroyl Cyanides)
- Synthesis 844
- Benzonitriles
- Synthesis 47, 682
- Cyclization Reactions 195
- 2-Benzyloxyalkanenitriles
- Synthesis and Reactions 856 (5909)
- Bridgehead-*gem*-aminocyanobicyclo[n.1.0]-alkanes
- Synthesis 465
- 2-Cyanoaziridines
- Synthesis 1006
- 2-Cyanocycloalkanones
- Synthesis 252 (5716)
- Cyanopyridines
- Synthesis 366, 694
- Cyclohexenecarbonitriles
- Synthesis 297
- 2,2-Dialkoxyalkanenitriles
- Reactions 889
- 3,3-Dialkylthio-2-aroylpropenenitriles
- Cyclization Reactions 1022
- 3,4-Diaryl-4-heteroarylalkanenitriles
- Synthesis 317
- Furanacetonitriles
- Reactions 1045 (5964)
- Furanpropynenitriles
- Synthesis 1045 (5964)
- 3-Halo-2-mercapto-2-alkenenitriles and *S*-Derivatives
- Cyclization Reactions 379
- 2-Hydroxyalkanenitriles and *O*-Derivates
- Synthesis 861
- 3-Hydroxyalkanenitriles
- Synthesis 1045 (5965)
- 4-Hydroxyalkanenitriles and *O*-Derivatives
- Synthesis 259 (5737), 588 (5846), 858 (5914)
- Cyclization Reactions 259 (5737), 588 (5846)
- 2-Hydroxy-3-alkenenitriles and *O*-Derivatives
- Synthesis and Reduction 863
- 2-Iminoalkanenitriles
- Hydrolysis 1045 (5966)
- 3-Mercaptoalkanenitriles and *S*-Derivatives
- Synthesis 410
- Oxiranecarbonitriles
- Synthesis 83 (5680)
- 2-Oxoalkanenitriles
- Synthesis 300
- 3-Oxoalkanenitriles
- Synthesis 83 (5680), 252 (5716)
- Cyclization Reactions 839
- 4-Oxoalkanenitriles
- Synthesis 458
- 3-(3-Oxo-2,3-dihydropyridazin-2-yl)-propanenitriles
- Synthesis 410

- α-Secondary Nitriles
- Oxidative Decyanation 1009
- Silylacetonitriles
- Synthesis 252 (5718)
- Reactions 252 (5718), 588 (5846)
- 1,2,3,4-Tetrahydroisoquinolin-1-yliden-acetonitriles
- Synthesis 1020
- Thiophenacetonitriles
- Reactions 1045 (5964)
- Thiophenepropynenitriles
- Synthesis 1045 (5964)

● *C*-Nitro Compounds
- 1-Chloro-1-nitrocycloalkanes
- Reactions 960 (5942)
- 1,ω-Dinitroalkanes
- Synthesis 276
- *gem*-Dinitrolactones
- Synthesis 268
- Exomethylenenitrobicycloalkanes
- Synthesis 498 (5804)
- Heterocyclic *C*-Nitro Compounds
- Reduction 129
- Heterocyclic *C*-Nitromethyl Compounds
- Synthesis 275
- Nitroadamantanes
- Synthesis 355
- Nitroalkanes
- Oxidation 662
- Reactions 44, 654, 1047 (5972)
- Nitroalkenes Type $C{=}C{-}NO_2$
- Reactions 407, 884
- Nitroalkenes Type $C{=}C{-}C{-}NO_2$
- Reactions 44
- Nitroalkenes Type $C{=}C{-}C_4{-}NO_2$
- Reactions 757
- *N*-(2-Nitroethyl)-amines
- Synthesis 884
- Nitroarenes
- Synthesis 663
- Reactions 40, 613, 616, 676 (5875)
- Reduction 129, 696
- ω-Nitrocarboxylic Acid Derivatives
- Synthesis 273, 277
- 2-Nitro-1,3-diketones
- Synthesis and Reactions 261 (review)
- Reduction 272
- α-Nitroketones
- Synthesis and Reactions 261 (review)
- Nitromethane
- Reactions 267
- Nitromethylarenes
- Synthesis 275

● *N*-Nitro Compounds
- Reactions 818

● Nitronic Acid Esters
- Synthesis 271
- Silyl Nitronates
- Synthesis 1047 (5972)

● Nitronic Acids and Salts
- Synthesis 270

● *C*-Nitroso Compounds
- 1-Nitroso-1-oxoalkanes
- *in situ* Reactions 761 (5884)

● *N*-Nitroso Compounds
- Denitrosation 741
- Reactions 818

● Nitroxyls
- Synthesis and Reactions 911, 914

● Noradamantanes (Tricyclo[3.3.1.0^{2,7}]-nonanes)

- Ring Synthesis 74

● Norepinephrines
- Synthesis 862

● Nucleosides
- Synthesis 75, 556
- *N*-Arylthiomethylation and Reduction of Products 1025
- *N*-Methylation 852
- Phosphorylation 831
- Reactions 75
- *N*-(1-Arylthioalkyl)-nucleosides
- Synthesis and Reduction 1025
- 3',5'-Diamino-3',5'-dideoxynucleosides
- Synthesis 559

● Nucleoside Triphosphates
- Synthesis 556

● Nucleotides
- Synthesis 18, 397

● Olefins
see: Alkenes

● Olivetols and Derivatives
- Synthesis 733

● Organocopper Compounds
- 1-Alkenylcopper Complexes
- Synthesis and Reactions 671 (5861)
- Alkylcopper Complexes
- Reactions 334 (5745) [1090], 671 (5861)
- 1-Alkynylcopper(I)
- Reactions 418 (5781)
- Lithium Bis[aminocarbonyl]-cuprates
- Synthesis and Reactions 764 (5893)
- Lithium Organocyanocuprates
- Reactions 872
- Organocuprates
- Reactions 335 (5749) (5750), 336 (5753), 671 (5861)

● Organolithium Compounds
- Reactions 333 (5743), 889
- 1-Alkenyllithium
- Reactions 150
- 1-Alkyl(Aryl)thioalkyllithium
- Reactions 78 (5666), 667 (5849)
- 1-Alkynyllithium
- Reactions 150
- 2-Amino-1-alkenyllithium
- Reactions 498 (5805)
- Aryllithium
- Synthesis 420 (5787)
- Reactions 420 (5787), 457
- *t*-Butyllithium
- Synthesis 859 (5917)
- 1,1-Dihaloalkyllithium
- Reactions 644
- 1,3-Dithio-1-alkynes
- Reactions 672 (5864)
- 1,*N*-Dilithio-2-aminoalkanes
- Synthesis and Reactions 859 (5918)
- 1,2-Dilithiocycloalkane-1,2-dicarboxylic Esters
- Reactions 389
- 1-Haloalkyllithium
- Reactions 644
- 1-Halo-1-lithioalkyl Sulfoxides
- Reactions 161 (5698), 582 (5827)
- 1-Lithioalkyl Sulfones
- Reactions 78 (5666)
- α-Lithiohexamethylphosphoric Triamide
- Synthesis and Reactions 575
- 3-Lithio-2-methyl-3-phenylpropenoic Esters
- Reactions 762 (5886)
- α-Lithionitriles
- Reactions 78 (5666)
- 5-Lithio-2-thioxo-2,3-dihydro-1,3-thiazoles
- Reactions 800
- Lithium Enaminates
- Reactions 413
- Lithium 2-Lithioalkoxides
- Synthesis and Reactions 859 (5918)
- Lithium 4-Lithio-2-alkynoates
- Reactions 251 (5713)
- Lithium α-Lithiocarboxylates
- Reactions 710

● Organomagnesium Compounds
- General, Type R−MgHal
- Reactions 77 (5663), 342 (5769), 561, 669 (5855), 674 (5868), 763 (5891), 877, 889
- Alkoxymagnesiomalonic Esters
- Reactions 111
- Alkylmagnesium Alkoxides
- Reactions 111
- Alkylmagnesium Halides
- Reactions 77 (5661), 80 (5671), 334 (5746), 337 (5756), 667 (5848), 671 (5860), 816, 942, 972
- 1-Alkynylmagnesium Halides
- Reactions 667 (5848)
- Arylmagnesium Halides
- Reactions 667 (5848), 679, 972
- Bis[halomagnesio]-alkanes
- Synthesis and Reactions 302
- Cyclopentadienylmagnesium Halides
- Reactions 189

● Organomercury Compounds
- 1-Alkenylmercury Halides
- Reactions 475
- Diarylmercury
- Synthesis 359

● Organopotassium Compounds
- Synthesis and Reactions 233

● Organosodium Compounds
- *N*,2-Disodioalkanamides
- Reactions 258 (5735)
- Sodiomalodinitrile
- Reactions 801

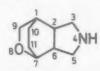
● Organotellurium Compounds
- Synthesis 227
- Aryl Silyl Tellurides
- Synthesis 216

● Orthocarboxylic Acid Esters
- 2-Alkenoic Orthoesters
- Reactions 342 (5769)

● 10-Oxa-4-azatricyclo[5.2.2.0^{2,6}]decane

- Δ^{8}-Derivatives
- Synthesis 199

● 8-Oxa-4-azatricyclo[5.2.2.0^{2,6}]undecane



- Δ^{10}-Derivatives
- Ring Synthesis and Transformation 194

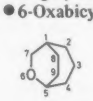
● 7-Oxabicyclo[2.2.1]heptane

- 7-Oxabicyclo[2.2.1]heptanes
- Ring Synthesis 370
- Ring Transformation 198
- 7-Oxabicyclo[2.2.1]heptenes
- Ring Synthesis 197, 198
- 7-Oxabicyclo[2.2.1]heptadienes
- Ring Synthesis 198, 201
- Reduction and Ring Transformation 198

● 7-Oxabicyclo[4.1.0]heptane

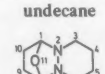
- 7-Oxabicyclo[4.1.0]-3-heptenes
- Ring Synthesis 182

● 6-Oxabicyclo[3.2.2]nonanes

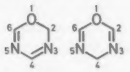


- Ring Synthesis 501 (5811)

● 11-Oxa-2,7-diazatricyclo[6.2.1.0^{2,7}]-undecane

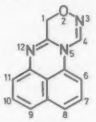


- 11-Oxa-2,7-diazatricyclo[6.2.1.0^{2,7}]-4,9-undecadienes
- Ring Synthesis 201
● 1,3,5-Oxadiazine



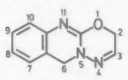
2*H*- 4*H*-

- 2,2'-Bi[4-oxo-2,3-dihydro-4*H*-1,3,5-oxadiazines]
- Ring Synthesis 785
- Tetrahydro-1,3,5-oxadiazines
- Ring Synthesis 349
● [1,2,4]Oxadiazino[4,5-*a*]perimidine



1*H*-

- Ring Synthesis 155
● [1,3,4]Oxadiazino[2,3-*b*]quinazoline



2*H*,6*H*-

- 6-Oxo-3,4-dihydro-2*H*,6*H* Derivatives
- Ring Synthesis 533
● 1,2,4-Oxadiazole

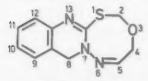
- Ring Synthesis 525
● [1,2,5]Oxadiazolo[3,4-*c*]pyridine

- Ring Synthesis 842
● 1,3,4-Oxadiazolo[3,2-*a*]pyrimidine

5*H*-

- 5-Oxo-6,7-dihydro-5*H* Derivatives
- Ring Synthesis 786
● 12-Oxatetracyclo[6.2.1.1^{7,10}.0^{1,6}]tetradecane

- Ring Synthesis 201
● [1,3,5,6]-Oxathiadiazocino[4,5-*b*]quinazoline

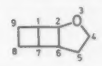


2*H*,4*H*,8*H*-

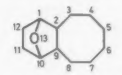
- 8-Oxo-2-thioxo-5,6-dihydro-2*H*,4*H*,8*H* Derivatives
- Ring Synthesis 533, 1091
● 10-Oxa-4-thiatricyclo[5.2.1.0^{2,6}]decane

- 10-Oxa-4-thiatricyclo[5.2.1.0^{2,6}]-8-decenes
- Ring Synthesis and Cleavage 197
● 9-Oxatricyclo[4.2.1.0^{2,5}]nonane

- 9-Oxatricyclo[4.2.1.0^{2,5}]-7-nonenes
- Ring Synthesis 201
● 3-Oxatricyclo[5.2.0.0^{2,6}]nonane

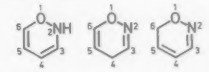


- 3-Oxatricyclo[5.2.2.0^{2,6}]-4-nonenes
- Ring Synthesis 201
● 13-Oxatricyclo[8.2.1.0^{2,9}]tridecane



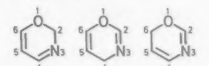
- 13-Oxatricyclo[8.2.1:1.0^{2,9}]-5,11-tridecadienes
- Ring Synthesis 201
● 1,3-Oxazete

- 2-Oxo-1,3-oxazetidines
- Ring Synthesis 571
● 1,2-Oxazine



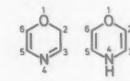
2*H*- 4*H*- 6*H*-

- 5,6-Dihydro-4*H*-1,2-oxazines
- Ring Synthesis and Cleavage 858 (5914)
● 1,3-Oxazine



2*H*- 4*H*- 6*H*-

- 6-Oxo-6*H*-1,3-oxazines
- Ring Transformation 197
- 5,6-Dihydro-4*H*-1,3-oxazines
- Ring Synthesis 63
- Tetrahydro-1,3-oxazines
- Ring Synthesis 792
● 1,4-Oxazine

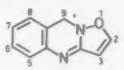


2*H*- 4*H*-

-2,5-Dioxotetrahydro-1,4-oxazines
- Ring Synthesis and Cleavage 857 (5912)
- 4-Alkylidenemorpholinium Salts
- Synthesis and Reactions 464
● 1,2-Oxazole

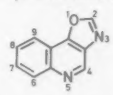
- 4,5-Dihydro-1,2-oxazoles
- Ring Synthesis 252 (5717), 598, 779
- Ring Cleavage 252 (5717)
- Bicycloalkane-fused 4,5-Dihydro-1,2-oxazoles
- Ring Synthesis 757
- 3-Oxotetrahydro-1,2-oxazoles
- Ring Cleavage 997
● 1,3-Oxazole

- 1,3-Oxazoles
- Ring Synthesis 256 (5729)
- 5-Oxo-2,5-dihydro-1,3-oxazoles
- Ring Synthesis 55
- 4,5-Dihydro-1,3-oxazoles
- Ring Cleavage 586 (5838)
- Ring Synthesis 63
- 4-Alkylidene-5-oxo-4,5-dihydro-1,3-oxazoles
- Synthesis and Ring Cleavage 836
- 5-Oxo-4,5-dihydro-1,3-oxazoles
- Alkylidenation 836
- Ring Cleavage 584 (5834), 585 (5835)
- 5-(1-Alkenyl)-tetrahydro-1,3-oxazoles
- Ring Transformation 860 (5921)
- 5-Imino-4-thioxotetrahydro-1,3-oxazoles
- Ring Synthesis 870
- 2-Oxotetrahydro-1,3-oxazoles
- Ring Synthesis 104, 576
- 5-Oxo-4-thioxotetrahydro-1,3-oxazoles
- Synthesis 870
● [1,2]Oxazolo[3,2-*b*]quinazoline



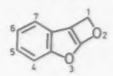
9*H*-

- 9-Oxo-2,3-dihydro-9*H* Derivatives
- Ring Synthesis 523
● 1,3-Oxazolo[4,5-*c*]quinoline



- 4-Oxo-4,5-dihydro Derivatives
- Ring Synthesis and Cleavage 527
● Oxete

- Oxetanes
- Ring Synthesis 503 (5818)
● Oxeto[2,3-*b*][1]benzofuran



1*H*-

- 2a,7b-Dihydro-1*H* Derivatives
- Ring Synthesis 203
● *N*-Oxides

see: Amine Oxides, Heteroaromatic *N*-Oxides, Nitrones

● Oxime Derivatives
- *O*-Acyloximes
- Reduction . 78 (5665)
- 2,4-Alkadienal *O*-Alkyloximes
- Synthesis 608
- *O*-Alkyloximes
- Synthesis 598, 608, 609
- Cycloalkanone *O*-(2-Alkenyl)-oximes
- Synthesis and Cyclization Reactions 260 (5739)
- *O*-Sulfonyloximes
- Rearrangement 329
● Oximes
- Reduction 78 (5664), 695
- Regeneration of the Carbonyl Compound 125, 220, 417 (5778)
- Aldoximes
- Synthesis 912
- Dehydration 659
- 2-Alkenyl Ketone Oximes
- Synthesis and Regeneration of the Carbonyl Compound 252 (5717)
- 4-Amino-2,4-alkadienal Oximes
- Synthesis 596
- 2-Cyclohexenone Oximes
- Aromatization 483, 889
- α-Hydroxyketoximes
- Fragmentation 45
- Ketoximes
- Synthesis 889
- Rearrangement 133, 222, 229, 960 (5942)
- Regeneration of the Ketone 65
- α-Oximinocarboxylic Acid Derivatives
- Reduction 891
- *o*-Quinone Dioximes
- Synthesis 146

- Styryl Ketones Oximes
- Cyclization Reactions 70
● Oxirene

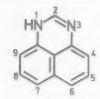
- Oxiranes
- Ring Synthesis 58, 83 (5680), 257 (5733), 675 (5873)
- Ring Cleavage 58, 83 (5680), 84 (5684), 104, 259 (5737), 359, 360, 422 (5794), 581 (5823), 671 (5861), 1039 (5945)
- Ring Transformation 104
- Acyloxiranes
- Ring Synthesis 37, 895
- (1-Alkenyl)-oxiranes
- Ring Synthesis 859 (5919)
● Oxosulfonium Salts
- Synthesis and Reduction 858 (5916)

● Paddlanes
- Synthesis 178, 201
● Pentalene

- Pentalenes
- Ring Synthesis 182
- Anellation Reactions 187
- 1,2,3,4-Tetrahydropentalenes
- Ring Synthesis 182
- 1-Oxo-1,2,3,4,5,6-hexahydropentalenes
- Ring Synthesis 251 (5715), 337 (5754)
- 2-Oxo-1,2,3,3a,4,6a-hexahydropentalenes
- Ring Synthesis 339 (5761)
- Octahydropentalenes
- Ring Synthesis 389
● Pentaleno[1,6-*cd*]-1,2-oxazole

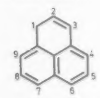
6b*H*-

- 3,4,4a,5,6,6a-Hexahydro-6b*H* Derivatives
- Ring Synthesis 757
● Peptides
- Synthesis 20, 929
- Cyclodipeptides
- Reactions 768 (5903)
- Methionine-Containing Oligopeptides and *N*-Trifluoroacetyl Derivatives
- Synthesis 730
- *O,N*-Protected Peptides
- Deblocking 1, 947
● Perimidine

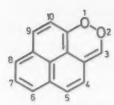


1*H*-

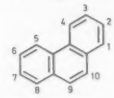
- Ring Synthesis 155
● Peroxy Compounds
- Synthesis 770, 783, 784, 788–791, 793
● Phanes
- Synthesis 180
- Reactions 167, 200, 201
● Phenalene



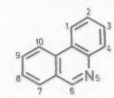
- 2,3,3a,4,5,6-Hexahydro-1*H*-phenalenes
- Ring Synthesis 395
● Phenaleno[1,9-*cd*]-1,2-dioxin



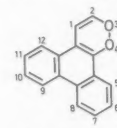
- 3,10a-Dihydro Derivatives
- Ring Synthesis 793
● Phenanthrene



- Phenanthrenes
- Ring Synthesis 770, 776, 780, 783
- Anellation Reactions 180
- 1,2,3,4-Tetrahydrophenanthrenes
- Ring Synthesis 200
- 1,2,3,10a-Tetrahydrophenanthrenes
- Ring Synthesis 774
- 1,2,3,4,9,10-Hexahydrophenanthrenes
- Ring Synthesis 349
- 1,2,3,9,10,10a-Hexahydrophenanthrenes
- Ring Synthesis 349
- 2,3,4,4a,9,10-Hexahydrophenanthrenes
- Ring Synthesis 348
- 1,2,3,4,5,6,7,9,10,10a-Decahydrophenanthrenes
- Ring Synthesis 582 (5825)
● Phenanthridine



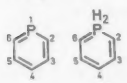
- 6-Oxo-5,6-dihydrophenanthridines
- Ring Synthesis 222
● Phenanthro[9,10-*c*][1,2]dioxin



- 1,2,4a,12b-Tetrahydro Derivatives
- Ring Synthesis 793
● Phenol Derivatives
- *O*-Acyl Derivatives
- Synthesis 58
● Phenols
- Ring Synthesis 708
- Synthesis 80 (5672), 159 (5692), 638, 865
- Anellation Reactions 716, 724, 726
- Conversion into Phenyl Cyanates 150
- Etherification 727
- Halogenation 487
- *C*-Hydroxymethylation 124
- Oxidation 943
- *o*-(1-Alkenyl)-phenols
- Synthesis 420 (5788)
- *o*-Aminomethylphenols
- Side-Chain Reactions 138
- Aminophenols, General
- *O*-Sulfonylation 577
- *o*-Aminophenols
- Cyclization Reactions 1004
- *o*-Cinnamylphenols
- Synthesis and Cyclization Reactions 618
- 3,4-Dialkylphenols
- Reduction 763 (5889)
- Halophenols
- Synthesis 487
- Anellation Reactions 495
- Hydroxybiphenyls
- Synthesis 634
- Hydroxydibenzofurans
- Synthesis 495
- 8-Hydroxyisocoumarins
- Synthesis 709
- *o*-Hydroxymethylphenols
- Synthesis 124
- 1-Naphthols
- Oxidation 943
● Pheophorbides
- from Chlorophyll 539
● Pheophytins
- from Chlorophyll 539
● Phorbins and Derivatives
- from Chlorophylls 539
● 1-Phosphabicyclo[2.2.2]octane

- 1-Phosphabicyclo[2.2.2]octatrienes
- Ring Synthesis 209
● Phosphine Imides
- Synthesis and Reactions 295
● Phosphine Oxides
- 1-Amino-2-hydroxyalkyldiphenylphosphine Oxides
- Synthesis and Reactions 498 (5803)
- Aminomethyldiphenylphosphine Oxides
- Synthesis and Reactions 498 (5803)
- Bis[iodomethyl]-phosphine Oxides
- Synthesis 823
- Tris[iodomethyl]-phosphine Oxides
- Synthesis 823
● Phosphines
- Aminophosphines
- Synthesis and Reactions 552
- Aryldihalophosphines
- Reactions 723
- Diaminophosphines
- Synthesis and Reactions 552
- Diphosphinocyclobutenediones
- Synthesis 972
- Triarylphosphines
- Reactions 106
● Phosphinic Acid Amides
- Synthesis and Reactions 717
● Phosphinic Acid Esters
- Synthesis 632
● Phosphinic Acids
- Esterification 632
- 1-Aminoalkyl-arylphosphinic Acids
- Synthesis 723
● Phosphinous Acid Esters
- Reactions 498 (5803)
● Phosphonic Acid Esters
- Cleavage 84 (5682)
- Acylaminomethanephosphonic Esters
- Synthesis 906
- Alkane-1,1-diphosphonic Esters
- Reactions 127
- Alkanephosphonic Esters
- Reactions 127
- Alkoxymethanephosphonic Esters
- Reactions 856 (5908)
- 1-Alkylthio-1-arylthio- or 1,1-Diarylthio-phosphonic Esters
- Synthesis 127
- 1-Aminoalkanephosphonic Esters
- Synthesis 1029
- Diaryl 4-Mercapto-1-thioureidoalkanephosphonates and *S*-Derivatives
- Synthesis and Reactions 1032
- Diphenyl Aminomethanephosphonate
- Synthesis 906
- 1-Isocyanatoalkanephosphonic Esters
- Synthesis 100, 105
- 1-Mercaptoalkane-1,1-diphosphonic Esters and *S*-Derivatives
- Synthesis 127, 1090
- 1-Mercaptoalkanephosphonic Esters and *S*-Derivatives
- Synthesis 127
- Myrtene-10-phosphonic Esters
- Synthesis and Reduction 456

- 1-Oxoalkanephosphonic Esters
- Reactions 1028
- 1-Siloxy-2-alkenephosphonic Esters
- Synthesis and Reactions 340 (5765)
- 1-Silylalkanephosphonic Esters
- Reactions 79 (5669)
● Phosphonic Acids
- Synthesis 84 (5682)
- 1-Aminoalkanephosphonic Acids
- Synthesis 723, 1029
- 1-Amino-3-mercaptoalkanephosphonic Acids and *S*-Derivatives
- Synthesis 1032
- Aminomethanephosphonic Acid
- Synthesis 906
● Phosphonium Salts
- 2-Alkoxy-1-alkenylphosphonium Salts
- Synthesis and Reactions 764 (5892)
- Alkyltriarylphosphonium Salts
- Synthesis 159 (5690)
- Aminophosphonium Salts
- Synthesis 295, 551
- Hydrolysis 295
- Diaminophosphonium Salts
- Synthesis 551
- Halomethyltriphenylphosphonium Salts
- Synthesis and Reactions 158 (5687)
- *o*-Hydroxybenzylphosphonium Salts
- Reactions 344 (5776)
● Phosphonochloridic Acid Esters
- 1-Isocyanatoalkanephosphonochloridic Esters
- Synthesis 105
● Phosphoranes
- Alkanediylidene-bis-phosphoranes
- Reactions 238
- Alkoxycarbonylmethylenetriarylphosphoranes
- Reactions 950
- Alkylidenetriarylphosphoranes
- Reactions 104, 163 (5702), 418 (5782), 1015
- Aryltetraiodophosphoranes
- Synthesis 824
- 2,2-Dialkoxyalkylidenetriarylphosphoranes
- Synthesis and Reactions 764 (5892)
- 2,4-Dioxo-3-triphenylphosphoranylidene-1,2,3,4-tetrahydroquinolines
- Synthesis 527
- 3-Halo-2-oxoalkylidenetriarylphosphoranes
- Reactions 957 (5930)
- 2-Oxoalkylidenetriarylphosphoranes
- Reactions 764 (5892)
- Tetraaryliodophosphoranes
- Synthesis 824
- Triaryldiiodophosphoranes
- Synthesis 824
● Phosphoric Acid Esters
- 1-Alkenyl Dialkyl Phosphates
- Synthesis and Reactions 335 (5749)(5750)
- Mixed Diesters
- Synthesis 675 (5872)
● Phosphoric Acid Triamides
- Hexamethylphosphoric Triamide (HMPT)
- Reactions 576
- *N*-(2-Hydroxyalkyl)-phosphoric Triamides
- Synthesis 576
● Phosphorin

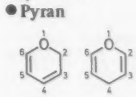


pV

- Cycloaddition Reactions 209
● Phosphorodiamidic Acid Esters
- 2-Alkenyl Phosphorodiamidates
- Synthesis and Reactions 290
● Phosphorodiamidic Chlorides
- Synthesis and Reactions 547
● Phosphorodichloridic Acid Esters
- Reactions 1004
● Phosphorodithioic Acid Esters
- Synthesis 100
● Phosphorothioic Acid Esters
- *O,O*-Dialkyl *S*-(1-Alkoxycarbonylalkyl) Phosphorodithioates
- Reactions 857 (5913)
● Phthalocyanines
- Synthesis 287
● Phyllostine
- Synthesis 182
● (+)- and (–)-α-Pinene
- Oxidation 456
● (+)- and (–)-β-Pinene
- Synthesis 456
● Platinol Derivatives

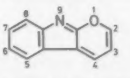
- Synthesis 992
● Polyamines
- Macrocyclic Polyamines
- Synthesis 969
● Polycyclic Compounds of Various Types
- Synthesis and Reactions 165+769 (review)
● Polycyclic criss-cross-Adducts
- Synthesis 792
● Polyenes (conjugated)
- Synthesis 955 (5923)
● Polynitriles
see also: Tetracyanoethylene
- 1,1,2,2-Tetracyanoalkanes
- Synthesis 790
- Tetracyanocyclobutanes
- Synthesis 176, 773, 790
- 1,1,2,2-Tetracyano-1,2,3,9a-tetrahydrocarbazoles
- Synthesis 790
- 2,2,3,3-Tetracyano-1,2,3,4-tetrahydropentalenes
- Synthesis 182
- 5,5,6,6-Tetracyano-1,2,3,4-tetraphenyl-1,3-cyclohexadiene
- Synthesis 194
- Tricyanocyclohexenes
- Synthesis 297
- Reactions 297, 916
- Tricyanopyridines
- Synthesis 471
● Poly-*p*-phenylenes
- Synthesis 195
● Porphyrins and Relatives
- Synthesis and Complex Formation 537
● Prismanes

- Synthesis and Transformation 173
● Propellanes
- Cycloaddition Reactions 187
● Propynal
- Synthesis 461
● Protoadamantanes
see: Tricyclo[3.3.1.1^{2,7}]decanes
● Pseudoionone and Analogs
- Synthesis 651
● Pyran

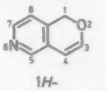


2*H*- 4*H*-

- 2-Pyrones (2-Oxo-2*H*-pyrans)
- Ring Synthesis 1022
- Ring Transformation 194, 195
- 2-Thioxo-2*H*-pyrans (Pyran-2-thiones)
- Ring Transformation 853
- Pyrylium Salts
- Ring Synthesis 597
- 5,6-Dihydro-2*H*-pyrans
- Ring Synthesis and Cleavage 492
● Pyrano[2,3-*b*]indole

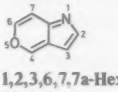


- 2-Oxo-2,9-dihydropyrano[2,3-*b*]indoles
- Ring Transformation 196
● Pyrano[4,3-*c*]pyridine

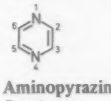


1*H*-

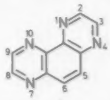
- 3,4,4a,5,6,7,8,8a-Octahydro-1*H*-pyrano-[4,3-*c*]pyridines
- Ring Synthesis 698
● Pyrano[4,3-*b*]pyrrole



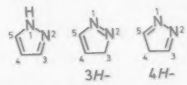
- 1,2,3,6,7,7a-Hexahydro Derivatives
- Ring Synthesis 773
● Pyrazine



- Aminopyrazines
- Synthesis 40
- Bis-adamantane-fused 3,6-Dihydropyrazines
- Ring Synthesis and Reduction 473
- Bis-adamantane-fused Hexahydropyrazines
- Synthesis 473
- 1,2-Bis[pyrazinyl]-ethylenes
- Cyclization Reactions 116
● Pyrazino[2,3-*f*]quinoxaline

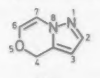


- Ring Synthesis 116
● Pyrazole



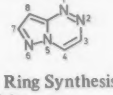
3*H*- 4*H*-

- Ring Synthesis 876
● Pyrazolo[5,1-*c*][1,4]oxazine

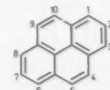


4*H*-

- 6-Oxo-6,7-dihydro-4*H* Derivatives
- Ring Synthesis 875
● Pyrazolo[3,2-*c*][1,2,4]triazine

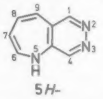


- Ring Synthesis 794
● Pyrene



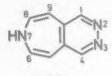
- Pyrenes
- Ring Synthesis 173
- 4,5,9,10-Tetrahydropyrenes
- Ring Synthesis 780
● Pyridazine

- Pyridazines
- Ring Synthesis 190
- Anellation Reactions 201
- 4,4′-Bipyridazines
- Synthesis 191
- 3-Mercaptopyridazines
- Synthesis and Reactions 410
- Pyridazine 1-Oxides
- Ring Cleavage 667 (5848)
- 2-(2-Cyanoethyl)-3-oxo-2,3-dihydropyridazines
- Synthesis 410
- 3-Oxo-2,3-dihydropyridazines
- Arylation 457
- 3-Thioxo-2,3-dihydropyridazines
- Synthesis 410
- 4-Oxo-1,2,3,4-tetrahydropyridazines
- Ring Synthesis 623
- 3-Oxo-2,3,4,5-tetrahydropyridazines
- Synthesis 457, 458
- 3-Oxo-1,2,3,6-tetrahydropyridazines
- Synthesis 457
- ● Pyridazino[4,5-*b*]azepine



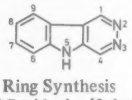
5*H*-

- 6,7,8,9-Tetrahydro-5*H* Derivatives
- Ring Synthesis 190
- ● Pyridazino[4,5-*d*]azepine

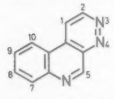


7*H*-

- Ring Synthesis 191
- ● Pyridazino[4,5-*b*]indole



- Ring Synthesis 190
- ● Pyridazino[3,4-*c*]quinoline

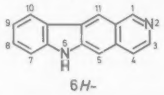


- 5-Oxo-5,6-dihydro Derivatives
- Ring Synthesis 190
- ● Pyridine

- Pyridines
- Ring Synthesis 189, 191, 195, 197, 204, 366, 596
- Ring Cleavage 600, 602, 607
- 2-Alkoxypyridines
- Synthesis 573
- 2-Alkylthiopyridines
- Synthesis 405
- 2-Aminopyridines
- Synthesis 40, 471
- Anellation Reactions 98
- Halopyridines
- Synthesis 378, 596
- 4-Substituted Pyridines
- Synthesis 767 (5901)
- Pyridine *N*-Oxides
- Synthesis 596
- Deoxygenation 660
- Pyridinium Salts
- Synthesis 159 (5690), 352, 405
- Ring Cleavage 31, 159 (5690), 598–609
- 2-Alkylthiopyridinium Salts
- Ring Synthesis and Cleavage 853
- *N*-Aminopyridinium Salts
- Ring Synthesis 597
- *N*-Sulfopyridinium Betaines
- Ring Cleavage 590, 592
- 3-Formyl-2-thioxo-1,2-dihydropyridines
- Reactions 405
- 2-Oxo-1,2-dihydropyridines (2-Pyridones)
- Ring Synthesis 597, 598, 1022
- *N*-Methylation 852
- Ring Transformation 192
- 2-Selenoxo-1,2-dihydropyridines
- Ring Synthesis 597
- 2-Thioxo-1,2-dihydropyridines
- Ring Synthesis 597, 598, 853
- 1-Acyl-4-benzylidene-1,4-dihydropyridines
- Reactions 485
- Piperidines
- Ring Synthesis 833, 1091
- ● Pyrido[3,2,1-*ij*][3,1]benzoxazine

1*H*,3*H*,5*H*-

- 1,3-Dioxo-6,7-dihydro-1*H*,3*H*,5*H* Derivatives
- Ring Synthesis 511
- ● Pyrido[4,3-*b*]carbazole



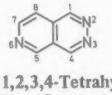
6*H*-

- 6*H*-Pyrido[4,3-*b*]carbazoles
- Synthesis and Transformations 384
- 1,2-Dihydro-6*H*-pyr... [4,3-*b*]carbazoles
- Synthesis 384
- ● Pyrido[2,3-*d*][1,3]oxazine

4*H*-

- 2,4-Dioxo-1,2-dihydro-4*H* Derivatives
- Ring Synthesis 510
- ● Pyrido[2,3-*d*]pyridazine

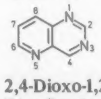
- 1,2,3,4-Tetrahydropyrido[2,3-*d*]pyridazines
- Ring Synthesis 190
- ● Pyrido[3,4-*d*]pyridazine



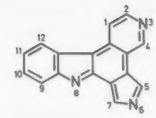
- 1,2,3,4-Tetrahydro Derivatives
- Ring Synthesis 203
- ● Pyrido[1,2-*c*]pyrimidine

1*H*-

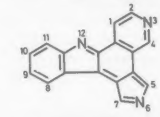
- 1-Oxo-2,3-dihydro-1*H* Derivatives
- Ring Synthesis 793
- ● Pyrido[3,2-*d*]pyrimidine



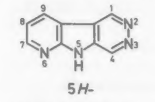
- 2,4-Dioxo-1,2,3,4-tetrahydro Derivatives
- Ring Synthesis 479
- ● Pyrido[3,4-*c*]pyrrolo[3,4-*a*]carbazole



- 5,7-Dioxo-1,2,3,4,5,6,7,8-octahydro Derivatives
- Ring Synthesis 791
- ● Pyrido[4,3-*a*]pyrrolo[3,4-*c*]carbazole

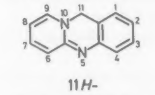


- 5,7-Dioxo-1,2,3,4,5,6,7,12-octahydro Derivatives
- Ring Synthesis 791
- ● Pyrido[3′,2′:4,5]pyrrolo[2,3-*d*]pyridazine



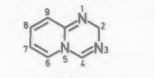
5*H*-

- Ring Synthesis 190
- ● Pyrido[2,1-*b*]quinazoline



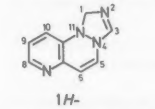
11*H*-

- 11-Oxo-6,7,8,9-tetrahydro-11*H* Derivatives
- Ring Synthesis 523
- ● Pyrido-1,3,5-triazine



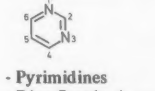
2*H*-

- Ring Synthesis 98
- ● Pyrido[3,2-*c*][1,2,4]triazolo[1,2-*a*]pyridazine

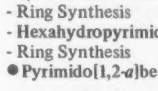


1*H*-

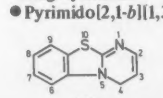
- 1,3-Dioxo-2,3,5,6-tetrahydro-1*H* Derivatives
- Ring Synthesis 791
- ● Pyrimidine



- Pyrimidines
- Ring Synthesis 191, 379
- 2,6-Diaminopyrimidines
- Ring Synthesis 748
- 6-Amino-2,4-dioxo-1,2,3,4-tetrahydropyrimidines
- Ring Synthesis 123
- 2,6-Diamino-4-oxo-3,4-dihydropyrimidines
- Ring Synthesis 123, 748
- Hexahydropyrimidines
- Ring Synthesis 833, 1091
- ● Pyrimido[1,2-*a*]benzimidazole



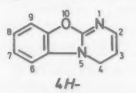
- 2,3,4,10-Tetrahydro (and 4-Oxo) Derivatives
- Ring Synthesis 785
- ● Pyrimido[2,1-*b*][1,3]benzothiazole



4*H*-

- 2,3-Dihydro-4*H* (and 4-Oxo) Derivatives
- Ring Synthesis 785, 786

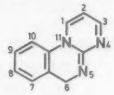
● Pyrimido[2,1-*b*][1,3]benzoxazole



4*H*-

- 2,3-Dihydro-4*H* (and 4-Oxo) Derivatives
- Ring Synthesis 785, 786

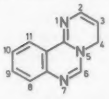
● Pyrimido[1,2-*a*]quinazoline



6*H*-

- 6-Oxo-1,4-dihydro-6*H* Derivatives
- Ring Synthesis 524

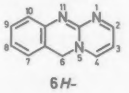
● Pyrimido[1,2-*c*]quinazoline



4*H*-

- 6-Oxo-2,3,6,7-tetrahydro-4*H* Derivatives
- Ring Synthesis 532

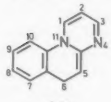
● Pyrimido[2,1-*b*]quinazoline



6*H*-

- 5-Oxotetrahydro-6*H* Derivatives
- Ring Synthesis 524

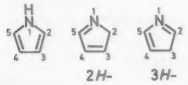
● Pyrimido[1,2-*a*]quinoline



6*H*-

- 6-Oxo-1,2,3,4-tetrahydro-6*H* Derivatives
- Ring Synthesis 529

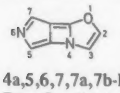
● Pyrrole



2*H*- 3*H*-

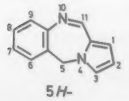
- Pyrroles
- Anellation Reactions 191, 193, 203
- Pyrrole-2-carboxylic Acids and Esters
- Synthesis 494
- 2-Oxo-2,3-dihydropyrroles
- Ring Synthesis 900
- 2,5-Dihydropyrroles
- Ring Synthesis 786
- 2-Oxo-2,5-dihydropyrroles
- Ring Synthesis 268
- Pyrrolidines
- Ring Synthesis 779, 786, 811, 860 (5921)
- 1-Amino-2-oxopyrrolidines
- Ring Synthesis 767 (5900)

● Pyrrolo[3′,4′:3,4]azeto[2,1-*b*][1,3]oxazole



- 4a,5,6,7,7a,7b-Hexahydro Derivatives
- Ring Synthesis 204

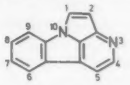
● Pyrrolo[2,1-*c*][1,4]benzodiazepine



5*H*-

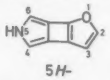
- Hydro Derivatives
- Ring Synthesis 520

● Pyrrolo[1,2,3-*lm*]-β-carboline



- Ring Synthesis 373

● Pyrrolo[3′,4′:3,4]cyclobuta[1,2-*b*]furan



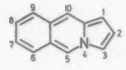
5*H*-

- 3a,3b,4,6,6a,6b-Hexahydro-5*H* Derivatives
- Ring Synthesis 203

● Pyrrolo[2,1,5-*cd*]indolizine

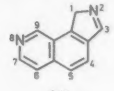
- 1,2-Dihydro Derivatives
- Ring Synthesis 791

● Pyrrolo[1,2-*b*]isoquinoline



- 5-Oxo-1,2,3,5-tetrahydro Derivatives
- Ring Synthesis 845

● Pyrrolo[3,4-*h*]isoquinoline



1*H*-

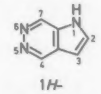
- 1,3-Dioxo-2,3,3a,4,5,9b-hexahydro Derivatives
- Ring Synthesis 792

● Pyrrolo[2,1-*c*][1,4]oxazine

1*H*-

- 1,4-Dioxohexahydro Derivatives
- Ring Synthesis and Cleavage 857 (5912)

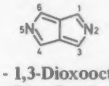
● Pyrrolo[2,3-*d*]pyridazine



1*H*-

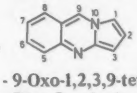
- 2,3-Dihydro-1*H* Derivatives
- Ring Synthesis 190

● Pyrrolo[4,3-*c*]pyrrole



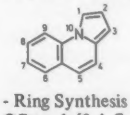
- 1,3-Dioxooctahydro Derivatives
- Ring Synthesis 786

● Pyrrolo[2,1-*b*]quinazoline



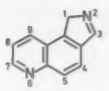
- 9-Oxo-1,2,3,9-tetrahydro Derivatives
- Ring Synthesis 523

● Pyrrolo[1,2-*a*]quinoline



- Ring Synthesis 209

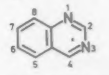
● Pyrrolo[3,4-*f*]quinoline



1*H*-

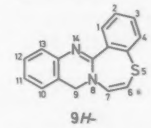
- 1,3-Dioxo-2,3,3a,4,5,9b-hexahydro-1*H* Derivatives
- Ring Synthesis 792

● Quinazoline



- Ring Synthesis 518
- 4,4′-Biquinazolines
- Ring Synthesis 787
- Quinazoline 3-Oxides
- Ring Synthesis 530
- 4-Oxo-1,4-dihydroquinazolines
- Ring Synthesis 524, 525
- 3,4-Dihydroquinazolines
- Ring Synthesis 57
- 4-Oxo-3,4-dihydroquinazolines
- Ring Synthesis 57, 517, 522, 523, 524, 525, 529, 530
- 2,4-Dioxo-1,2,3,4-tetrahydroquinazolines
- Ring Synthesis 516, 517, 520, 523, 529
- 2,4-Dithioxo-1,2,3,4-tetrahydroquinazolines
- Ring Synthesis 311, 531, 532
- 2-Imino-4-oxo-1,2,3,4-tetrahydroquinazolines
- Ring Synthesis 524
- 2-Oxo-1,2,3,4-tetrahydroquinazolines
- Ring Synthesis 97
- 4-Oxo-1,2,3,4-tetrahydroquinazolines
- Ring Synthesis 529
- 2-Oxo-4-thioxo-1,2,3,4-tetrahydroquinazolines
- Ring Synthesis 311, 523, 524, 529
- 2-Oxo-1,2,3,4,4a,5,6,7-octahydroquinazolines
- Ring Synthesis 778

● Quinazolino[3,2-*d*][1,4]benzothiazepine



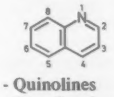
9*H*-

- 9-Oxo-6,7-dihydro-9*H* Derivatives
- Ring Synthesis 523

● Quinol Derivatives

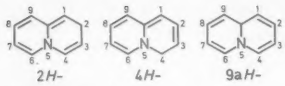
- 4-Cyano-4-trimethylsiloxycyclohexadienone
- Synthesis and Reconversion into *p*-Benzoquinone 863
- 1,2- and 1,4-Naphthoquinol Acylates
- Synthesis 944
- *o*-Quinol Acylates
- Synthesis 944
- Quinol Halides
- Reduction 495

● Quinoline



- Quinolines
- Ring Synthesis 787
- 2-Oxo-1,2-dihydroquinolines
- Ring Synthesis 527, 533
- 4-Oxo-1,4-dihydroquinolines
- Ring Synthesis 526, 527, 528, 529, 533
- 2-Oxo-1,2,3,4-tetrahydroquinolines
- Ring Synthesis 663
- 5,6,7,8-Tetrahydroquinolines
- Ring Synthesis 260 (5739)

● Quinolizine



2*H*- 4*H*- 9a*H*-

- Ring Synthesis 792
● **Quinone Derivatives**
- **1,2-Naphthoquinone 2-Diacylates**
- Synthesis 944
- ***o*-Quinone Dioximes**
- Synthesis 146
● **Quinones**
- **9,10-Anthraquinones**
- Synthesis 172, 195
- **Benzo[*a*]anthracene-7,12-quinones**
- Synthesis 775
- ***o*-Benzoquinones**
- Synthesis 497 (5801), 707
- Diels-Alder Reactions 172, 181
- ***p*-Benzoquinones**
- Synthesis 706, 753
- Anellation to give *o*-Hydroxyphenylacetic Acid Lactones 111
- Blocking as Cyanohydrin and Deblocking 863
- Diels-Alder Reactions 177, 182, 775, 782, 789
- **4,5-Diamino-*o*-benzoquinones**
- Reactions and Ring Cleavage 370
- **Dibenzo[*a*,*h*]anthracene-7,14-quinones**
- Synthesis 782
- **5,6-Dihydroxy-1,4-naphthoquinone**
- Synthesis 754
- **1-Hydroxyanthraquinones**
- Synthesis 1043 (5956)
- **1,2-Naphthoquinones**
- Synthesis 943
- **1,4-Naphthoquinones**
- Anellation Reactions 195, 313, 1043 (5956)
- **6-Oxo-5,6,7,8-tetrahydro-1,4-naphthoquinones**
- Synthesis 753
- **Phenanthrene-1,4-quinones**
- Synthesis 775
- **Tryptycenequinones**
- Synthesis 177

● **Reductones**
- **Aminoreductones**
- Synthesis 272
● **Reissert Compounds**
- Synthesis and Reactions 384
● **Rhodins and Derivatives**
- Synthesis 541

● **1,3,4-Selenadiazolo[3,2-*a*]pyrimidine**

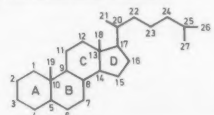
5*H*-

- **5-Oxo-6,7-dihydro-5*H* Derivatives**
- Ring Synthesis 786
● **Seleninic Acids**
- Reactions 343 (5772)
● **Selenocarboxylic Acid Esters**
- ***Se*-Aryl Selenocarboxylates**
- Synthesis 343 (5772), 570
- **2,2-Dihalo-4-alkeneselenoic *Se*-Esters**
- Synthesis 253 (5721)
● **Selenoethers**
- **2-Acyloxyalkyl Aryl Selenides**
- Synthesis 1047 (5973)
- **2-Alkenyl Selenides**
- Reactions 253 (5721)
- **Alkyl Aryl Selenides**
- Synthesis 421 (5791), 569
- **Aryl Benzyl Selenides**
- Synthesis 72
- **Dialkyl Selenides**
- Synthesis 569
● **Selenols**
- **Areneselenols**
- Reactions 421 (5791)
● **Selenoureas**
- Synthesis 60
● **Semibullvalenes**

- Cycloaddition Reactions 186
● **Semicarbazides**
- **4-Adamantylsemicarbazides**
- Synthesis 473
● **Silanes**
- **Acyloxymethyltrimethylsilanes**
- Synthesis and Reduction 318
- **1-Alkenylsilanes**
- Synthesis 80 (5671), 803
- Reactions 251 (5715), 337 (5754)
- ***(E)*-1-Alkenylsilanes**
- Synthesis 803
- **2-Alkenylsilanes**
- Reactions 857 (5911), 956 (5928)
- **Alkylthiosilanes**
- Synthesis 766 (5898)
- **1-Alkynylsilanes**
- Reactions 80 (5671), 256 (5730), 422 (5793)
- Reduction 803
- **2-Aminoalkylsilanes**
- Synthesis 859 (5918)
- **Arylselenotrialkylsilanes**
- Synthesis 216
- **Aryltellurotrialkylsilanes**
- Synthesis 216
- **2-Arylthio-1-alkenylsilanes**
- Synthesis 587 (5841)
- **Arylthiosilanes**
- Synthesis 766 (5898)
- **1,2-Bis-silyl-1-alkenes**
- Synthesis and Reactions 256 (5730)
- **Cyanotrialkylsilanes**
- Synthesis 460
- **α-Haloacylsilanes**
- Reactions 669 (5854)
- **Halomethyltrimethylsilanes**
- Synthesis 319
- Reactions 318
- **Halotrialkylsilanes**
- Reactions 460, 1047 (5972)
- **2-Hydroxyalkylsilanes**
- Synthesis 859 (5918)
- **1-Siloxy-2-alkenylsilanes**
- Reactions 673 (5866)
- **Silylacetylenes**
- Reactions 628
- **2-Silyl-1-alkenes**
- Synthesis 256 (5730)
- **1-Silylcycloalkenes**
- Synthesis 704
- **Trialkyltrichloromethylsilanes**
- Synthesis 626
● **Silyl Esters**
- **Silyl 2,3-Alkadienoates**
- Synthesis 251 (5713)
- **Silyl 2-Alkynoates**
- Synthesis 251 (5713)
- **Silyl Carbamates**
- Synthesis and Reactions 864
- **Silyl Carboxylates, General**
- Synthesis 546, 586 (5839), 626, 766 (5898)
- Reactions 586 (5839)
- **Silyl 2-Chloro-2,4-disiloxy-3-butynoates**
- Synthesis 992
- **Silyl 2,2-Dihaloalkanoates**
- Reactions 676 (5874)
- **Silyl Trihaloacetates**
- Cyclization Reactions 676 (5874)
- Silylative Decarboxylation 626
● **Silyl Ethers**
- Synthesis 234, 766 (5898), 1047 (5972)
- Cleavage 234
- **1,3-Alkadienyl Silyl Ethers**
- Synthesis 503 (5817)
- Reactions 132, 497 (5802), 503 (5817)
- **1-Alkenyl Silyl Ethers (Enol Silyl Ethers)**
- Synthesis 257 (5732), 1047 (5972)
- Reactions 251 (5714), 336 (5752), 941, 960 (5940)
- **2-Alkenyl Silyl Ethers**
- Reactions 257 (5732)
- **Alkyl Silyl Ethers**
- Synthesis 257 (5731), 864
- Cleavage 84 (5683)
- Oxidation 897
- Reactions 80 (5670)
- ***vic*-Diketone Enol Silyl Ethers**
- Synthesis 310
● **Silyl Nitronates**
- Reactions 44
● **Silyl Selenoethers**
- Synthesis 216
● **Songorin**
- Synthesis 788
● **Spiro Compounds (Synthesis)**
- Fluorene-spiro-cyclohexenes 794
- *N*-Heterocyclic Spiro Compounds 533
- Spirochromans 301
- 1;6,8-Trioxo-2-oxa-7-azaspiro[4.5]decane 698
● **Squaraines**
- Synthesis 976, 978 (review)
● **Squaric Acid and Derivatives**
- Reactions 961 (review)
● **7-Stannabicyclo[2.2.1]heptane**

- **7-Stannabicyclo[2.2.1]heptenes**
- Ring Synthesis and Cleavage 194
● **Stannanes**
- **General, Type R_4Sn**
- Reactions 334 (5747)
- **2-Alkenyltrialkylstannanes**
- Synthesis 1011
- Oxidation 1011
- Reactions 584 (5832) (5833)
- **Alkylthio- and Arylthiotrialkylstannanes**
- Reactions 341 (5767)
- **Trialkyldeuteriostannanes**
- Synthesis 942
● **Stannole**

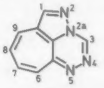
- Ring Transformation 194
● **Steroids and Relatives**



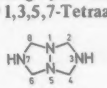
- **6-Aminomethylestrogene Derivatives**
- Synthesis 862
- **25-Azacoprostane**
- Synthesis 995
- **2-Bromo-3-oxo-Δ^1-steroids**
- Cyclopropanation 742
- **Cholanamides**
- Synthesis and Reduction 995
- **1,2-Cyclopropanosteroids**
- Synthesis 742
- **21-Hydroxy-3,20-dioxo-4-pregnenes**
- Oxidation 739
- **20-Hydroxy-4-pregnen-21-oic Acid**
- Synthesis 739

- Lithocholic Acid
- Reactions 995
- Nortestosterone
- Synthesis 582 (5825)
- 6-Oximinosteroids
- Rearrangement 229
- Steroidal Alcohols
- Deoxygenation 1040 (5947)
- Steroidal Spiro-Lactones
- Synthesis 290
- Steroid Hydrocarbons
- Synthesis 1040 (5947)
- Stibine Oxides
- Diarylhydroxyantimony Oxides
- Synthesis 358
- Stibines
- Synthesis 358, 359
- Styrenes
- Cyclization Reactions 769
- Sulfenic Acid Amides
- *N*-Alkylidenesulfenamides
- Synthesis and Reactions 256 (5728)
- Sulfenic Acid Halides
- Alkanesulfenyl Chlorides
- Reactions *in situ* 690
- Sulfenic Acids
- *in situ* Reactions 1046 (5969)
- Sulfilimines
- Reactions 1006
- Sulfinic Acid Amides
- Synthesis 937
- Sulfinic Acid Esters
- 2-Alkynyl Sulfinates
- Reactions 419 (5786)
- Arenesulfinic Esters
- Synthesis 937
- Sulfinic Acids
- Reactions 475, 937
- Arenesulfinic Acids
- Synthesis 355
- Sulfurization 615
- Sulfinothioic Acid Esters
- Synthesis 937
- Sulfones
- Synthesis 565
- Reactions 858 (5916)
- Reduction 858 (5916)
- 1-Alkenyl Sulfones
- Synthesis 475, 481, 806
- Reduction 481
- 2-Alkenyl Sulfones
- Synthesis 928
- Reactions 334 (5746)
- Alkyl Aryl Sulfones
- Synthesis 353, 354, 914
- 1-Alkynyl Sulfones
- Reactions 481
- Alkylthiomethylene Disulfones
- Synthesis 412
- Aryl Benzyl Sulfones
- Synthesis 159 (5690)
- Aryl 2-(2-Hydroxyaryl)-alkyl Sulfones
- Synthesis 138
- 1-Cyanoalkyl Sulfones
- Alkylation 565
- Diaryl Sulfones
- Synthesis 353, 354
- Methylene Disulfones
- Alkylation 565
- 1-Nitroalkyl Sulfones
- Alkylation 565
- 2-Oxoalkyl Sulfones
- Alkylation 565
- Sulfonic Acid Chlorides
- Synthesis 285
- Sulfonic Acid Esters
- 1-Alkenesulfonic Esters
- Synthesis and Reactions 285
- 1-Alkenyl Trifluoromethanesulfonates
- Synthesis 283
- Alkyl Sulfonates
- Reactions 914
- *sec*-Alkyl Sulfonates
- Reactions 292
- 2-Aminioalkanesulfonic Ester Salts
- Synthesis and Reactions 285
- 2-Aminoalkanesulfonic Esters
- Synthesis and Reactions 285
- Aminoaryl Arenesulfonates
- Synthesis 577
- Sulfonic Acid Hydrazides
- Synthesis 244
- Sulfonium Salts
- Alkyldiarylsulfonium Salts
- Reactions 926
- 2-Amino-1-alkenylsulfonium Salts (Enaminesulfonium Salts)
- Synthesis 467
- Reactions 463, 465, 467
- 2,2-Diaminoalkylsulfonium Salts
- Synthesis 467
- Sulfonothioic Acids
- Synthesis 615
- Sulfoxides
- Synthesis 563, 858 (5916)
- Deoxygenation 67, 221, 255 (5726), 695, 865
- 1-Alkenyl Aryl Sulfoxides
- Cyclization Reactions 176, 184, 190, 203
- 1-Alkenyl Sulfoxides
- Synthesis 1046 (5970)
- Aryl Phenacyl Sulfoxides
- Reactions 881
- 2-Cyanoethyl Sulfoxides
- Reactions 1046 (5969)
- Dialkyl Sulfoxides
- Reactions 255 (5727)
- 1,2-Epoxalkyl Sulfoxides
- Synthesis and Reactions 161 (5698)
- 1-Halo-2-hydroxyalkyl Sulfoxides
- Synthesis and Reactions 582 (5827)
- 2-Hydroxyalkyl Aryl Sulfoxides
- Synthesis and Reactions 640
- 3-Oxo-1-alkenyl Sulfoxides
- Reactions 390

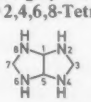
- Telluroethers
- Dialkyl Tellurides
- Synthesis 569
- Perfluorinated Dialkyl Tellurides
- Synthesis 356
- 2,2a,4,5-Tetraazabenzo[*cd*]azulene



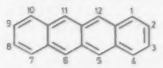
- 3,4-Dihydro Derivatives
- Ring Synthesis 331
- 1,3,5,7-Tetraazabicyclo[3.3.0]octane



- Ring Synthesis 785
- 2,4,6,8-Tetraazabicyclo[3.3.0]octane



- 3,7-Dioxo Derivatives
- Ring Synthesis 785
- Tetracarboxylic Acid Esters
- Diethyl 4-(2-Ethoxycarbonylethenyl)-5-(2-ethoxycarbonylethyl)-phthalate
- Synthesis 950
- 3-Hydrazonoalkane-1,1,5,5-tetracarboxylic Esters
- Synthesis 148
- Tetrakis[2-ethoxycarbonyl-*trans*-ethenyl]-ethene
- Synthesis and Cyclization Reactions 950
- Tetracene (Naphthacene)

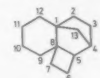


- Ring Synthesis 689
- Tetracyanoethylene
- Cyclization Reactions 167, 172, 182, 183, 184, 194, 207, 471, 788, 790
- Tetracyclo[4.4.2.0^{1,4}.0^{6,9}]dodecane

- 2,4,7,9-Tetraene Derivatives
- Ring Synthesis 167
- Tetracyclo[3.2.1.0^{2,4}.0^{3,8}]octanes

- Ring Synthesis 172
- Tetracyclo[6.2.2.1^{2,5}.0^{2,7}]tridecane

- 3,6,9,11-Tetraene Derivatives
- Ring Synthesis 788
- Tetracyclo[8.2.1.0^{1,8}.0^{5,8}]tridecane

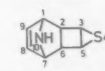


- 2,6,9,11-Tetraene Derivatives
- Ring Synthesis 788
- 2,5,7,8-Tetraoxabicyclo[4.2.0]octane

- Ring Synthesis and Cleavage 793
- Tetrasulfides
- Synthesis and Reactions 918
- 1,2,4,5-Tetrazine

- Diels-Alder Reactions 190, 191
- Tetrazole

- Ring Synthesis 99
- 4-Thia-10-azatetracyclo[5.2.1.0^{2,6}.0^{3,5}]-8-decenes



- Ring Synthesis 193
- 5-Thia-1-azabicyclo[4.2.0]octane

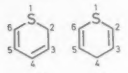
- 5-Thia-1-azabicyclo[4.2.0]-2-octenes
- Ring Synthesis 453
- 5-Thiabicyclo[2.1.0]pentanes (Dewar Thiophenes)

- Reactions 193
- [1,2,5]Thiadiazolo[3,4-c]pyridine

- Ring Synthesis 842
● 1,3,4-Thiadiazolo[3,2-*a*]pyrimidine

5*H*-

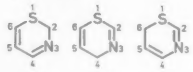
- 6-Oxo-6,7-dihydro-5*H* Derivatives
- Ring Synthesis 786
● Thiaexaltolide
- Synthesis 65
● Thialactones
- 15-Pentadecanethiolide and 12-Oxo Derivatives
- Synthesis 65
● Thiaminium Salts
- Synthesis and Reactions 217, 218
● Thiapyran (Thiin)



2*H*- 4*H*-

- 2-Substituted 4-Oxotetrahydrothiapyrans (Thian-4-ones)
- Synthesis and Ring Cleavage 910
● 1,3-Thiazete

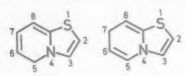
- 2-Alkylidene-1,3-thiazetidines
- Ring Synthesis 786
● 1,3-Thiazine



2*H*- 4*H*- 6*H*-

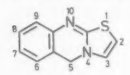
- Ring Synthesis 453
● 1,3-Thiazole

- 2-Thioxo-2,3-dihydro-1,3-thiazoles
- *C*-Substitution 800
- 5-Oxo-4,5-dihydro-1,3-thiazoles
- Ring Cleavage 81 (5673)
- Tetrahydro-1,3-thiazoles
- Anellation Reactions 387
- 2-Alkylidene-4-oxotetrahydro-1,3-thiazoles
- Ring Synthesis 839
● [1,3]Thiazolo[3,2-*a*]pyridine



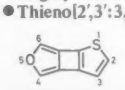
5*H*- 7*H*-

- Hexahydro Derivatives
- Ring Synthesis 387
● [1,3]Thiazolo[2,3-*b*]quinazoline



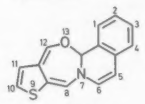
5*H*-

- 5-Oxo-2,3-dihydro-5*H* Derivatives
- Ring Synthesis 518
● Thieno[2',3':3,4]cyclobuta[1,2-*c*]furan



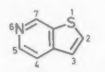
- 3a,3b,4,6,6a,6b-Hexahydro Derivatives
- Ring Synthesis 203, 205
● Thieno[3,2-*c*]-1,2-dioxin

- 3,7a-Dihydro Derivatives
- Ring Synthesis 791
● Thieno[2',3':5,6][1,3]oxazepino[2,3-*a*]isoquinoline

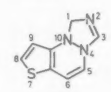


13a*H*-

- 5,6,8,12-Tetrahydro-13a*H* Derivatives
- Ring Synthesis 1021
● Thieno[2,3-*c*]pyridine



- 4,5-Dihydrothieno[2,3-*c*]pyridines
- Ring Synthesis and Reduction 469
- 4,5,6,7-Tetrahydrothieno[2,3-*c*]pyridines
- Synthesis and Anellation Reactions 469
● Thieno[3,2-*c*][1,2,4]triazolo[1,2-*a*]pyridazine



1*H*-

- 1,3-Dioxo-2,3,5,9a-tetrahydro-1*H* Derivatives
- Ring Synthesis 791
● Thiocarbamic Acid Esters
- *O*-Alkyl Thiocarbamates
- Reductive Cleavage 1040 (5947)
- *S*-Esters
- Synthesis 254 (5724)
- Reactions 841
● Thiocarboxylic Acid Amides
- Synthesis 453
- Alkanethioamides
- Reactions 424 (5800)
- *N*-Alkylidenethiocarboxamides
- Synthesis and Cyclization Reactions 453
- 2-Arylalkanethioamides and Hetero Analogs
- Synthesis 736
- *N*-Monosubstituted Thiocarboxamides
- *S*-Alkylation 855 (5906)
- Nitrilothioacetamides
- Synthesis and Reactions 870
- *N*-Unsubstituted Thiocarboxamides
- *S*-Alkylation 855 (5906)
● Thiocarboxylic Acid Esters
- *o*-Aminothiobenzoic *S*-Esters
- Synthesis 514
- 2,2-Dihalo-4-alkenethioic *S*-Esters
- Synthesis 253 (5721)
- *S*-Esters, General
- Synthesis 341 (5767), 352
- 3-Hydroxyalkanethioic *S*-Esters
- Synthesis 500 (5809)
- ω-Nitroalkanethioic *S*-Esters
- Synthesis 273
- 3-Oxoalkanethioic *S*-Esters
- Synthesis 159 (5691), 959 (5939)
- Alkylation and Reductive Cleavage 761 (5885)
● Thiocarboxylic Acids
- Reactions 721
● Thiocarboxylic Acids, Reactive *S*-Derivatives
- *N*-Acylthiosuccinimides
- Synthesis 721
● Thiocyanates
- Synthesis 300, 1090
● Thioethers
- Synthesis 67, 113, 221, 255 (5726), 696
- Oxidation 563
- 1-Alkenyl Sulfides
- Synthesis 164 (5706), 255 (5727), 336 (5753), 342 (5771), 419 (5785)
- Hydrolytic Cleavage 164 (5706)
- Reactions 77 (5663), 336 (5733), 419 (5785)
- 2-Alkenyl Sulfides
- Reactions 253 (5721)
- Alkyl Aryl Sulfides
- Synthesis 159 (5690), 249 (5707), 586 (5840), 914, 952
- 9-Alkylthioacridines
- Synthesis 850
- Alkylthioindolizines
- Synthesis 886
- Aryl Benzyl Sulfides
- Synthesis 72
- Aryl Pyridazinyl Sulfides
- Synthesis 410
- Bis[phenylsulfonyl]-methyl 2-Oxoalkyl Sulfides
- Synthesis 412
- 1-Haloalkyl Sulfides
- Reactions 497 (5802)
- Halomethyl Sulfides
- Synthesis 952
- 3-Oxo-1-alkenyl Sulfides
- Reactions 390
- 3-Oxoalkyl Sulfides
- Oxidation 392
- Polyfluorinated Sulfides
- Synthesis 357
● Thioketones
- Synthesis 352, 585 (5837)
● Thiolactams
- Synthesis 786
● Thiols (Mercaptans)
- Oxidative *S*–*S* Coupling 32
- 2-Acylaminoethanethiols
- Synthesis 924
- Alkanethiols
- Synthesis 914
- *o*-Aminoarenethiols
- Reactions 313
- 3-Hydroxyalkanethiols
- Synthesis 910
- Mercaptopyridazines
- Synthesis and Reactions 410
● Thiomalonic Acid Esters
- Dithiomalonic *S,S*-Diesters
- Synthesis and Reductive Cleavage 762 (5887)
- Monothiomalonic *S*-Esters
- Reactions 159 (5691)
● Thiophene

- Thiophenes
- Ring Synthesis 598
- Cycloaddition Reactions 203, 204, 205
- Formylation 133
- Ring Transformation 204
- Side-Chain Reactions 133
- Tetrahydrothiophenes
- Ring Synthesis 839
● Thiophosphoric Acid Esters
see: Phosphorothioic Acid Esters
● Thiosquaraines
- Synthesis 989
● Thiosquaric Acid and Derivatives
- Synthesis 977
● Thiosulfonic Acid Esters
see: Sulfonothioic Acids
● Thiuronium Salts
- Synthesis and Reactions 914

● **Thymidine and Derivatives**
- Synthesis 75, 398
● **Tilidene**
- Synthesis 773
● **2,6,7-Triazabicyclo[3.2.2]nonane**

- **2,6,7-Triazabicyclo[3.2.2]-3,8-nonadienes**
- Ring Synthesis 207
● **1,3a,6a-Triazapentalenes (Mesoionic)**

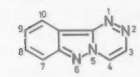
- Cycloaddition Reactions 210
● **2,4,6-Triazatricyclo[5.2.2.0^{2,6}]undecane**

- **3,5-Dioxo-8-ene Derivatives**
- Ring Synthesis 238
● **Triazenes**

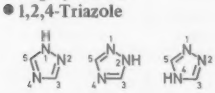
- **1-Aryl-3,3-dialkyltriazenes**
- Synthesis and Reactions 116, 572
● **1,2,4-Triazine**

- **1,2,4-Triazines**
- Ring Transformation 191
- **Adamantane-fused 3-Oxo-2,3,4,5-tetrahydro-1,2,4-triazines**
- Ring Synthesis 473
● **1,3,5-Triazine**

- **1,3,5-Triazines**
- Ring Synthesis 89, 101, 841
- **4-Oxo-1,2,3,4-tetrahydro-1,3,5-triazines**
- Ring Synthesis 101
- **2,4-Dioxohexahydro-1,3,5-triazines**
- Ring Synthesis 785
● **[1,2,4]Triazino[4,3-*b*]indazole**

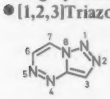


- Ring Synthesis 794
● **1,2,4-Triazole**

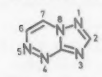


2*H*- 4*H*-

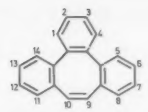
- **5-Thioxo-4,5-dihydro-1,2,4-triazoles**
- Ring Synthesis 311
● **[1,2,3]Triazolo[4,3-*c*][1,2,4]triazine**



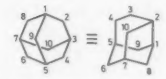
- Ring Synthesis 794
● **[1,2,4]Triazolo[3,2-*c*][1,2,4]triazine**



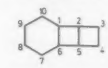
- Ring Synthesis 794
● **Tribenzocyclooctene**



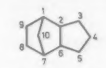
- Ring Synthesis 185
● **1,1,1-Tricarboxylic Acid Esters**
- Synthesis and Reactions 502 (5813)
● **Tricyclo[3.3.1.1^{2,7}]decanes (Protoadamantanes)**



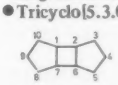
- Ring Transformation 74
● **Tricyclo[4.4.0.0^{2,5}]decane**



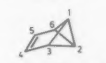
- Ring Synthesis and Transformation 1024
● **Tricyclo[5.2.1.0^{2,6}]decane**



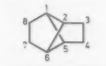
- Ring Transformation 346
● **Tricyclo[5.3.0.0^{2,6}]decane**



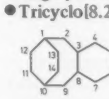
- **Tricyclo[5.3.0.0^{2,6}]decadienes**
- Ring Synthesis 184
● **Tricyclo[3.1.0.0^{2,4}]hexene (Benzvalene)**



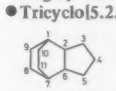
- Ring Transformation 173
● **Tricyclo[3.3.0.0^{2,6}]octane**



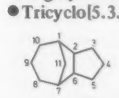
- **Tricyclo[3.3.0.0^{2,6}]-3-octenes**
- Ring Synthesis 172
● **Tricyclo[8.2.2.0^{3,8}]tetradecane**



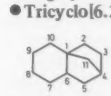
- **Tricyclo[8.2.2.0^{3,8}]-3^{8},11,13-tetradecatrienes**
- Ring Synthesis 171
● **Tricyclo[5.2.2.0^{2,6}]undecane**



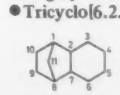
- **Tricyclo[5.2.2.0^{2,6}]-3,8-undecadienes**
- Ring Synthesis 181
● **Tricyclo[5.3.1.0^{2,6}]undecane**



- **Tricyclo[5.3.1.0^{2,6}]-8-undecenes**
- Ring Synthesis 170
● **Tricyclo[6.2.1.0^{1,6}]undecane**



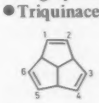
- **Tricyclo[6.2.1.0^{1,6}]-2,5,7,9-undecatetraenes**
- Ring Synthesis 788
● **Tricyclo[6.2.1.0^{2,7}]undecane**



- **Tricyclo[6.2.1.0^{2,7}]-9-undecenes**
- Ring Synthesis 184
● **Triketones**
- **1,4,7-Alkanetriones**
- Synthesis 338 (5759)
- **2,4,6-Alkanetriones**
- Cyclization Reactions 708
- **2-(2-Oxoalkyl)-1,3-alkanediones**
- Synthesis and Cyclization Reactions 408
- **1,3,5-Triacylbenzenes**
- Synthesis 29
● **3,5,10-Trioxatricyclo[5.2.1.0^{2,6}]-8-decenes**

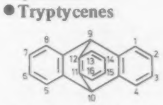
- Ring Synthesis 201
● **1,4,7-Trioxonane**

- Ring Synthesis 359
● **Triquinacenes**



- Cycloaddition Reactions 186
● **[7]Trithiacirculene**
- Ring Synthesis 206
● **1,2,4-Trithiolane**

- Ring Synthesis 907
● **Trisulfides**
- Synthesis and Reactions 918
● **Tropones**
see: Cycloheptatrienes
● **Tryptamines**
- Synthesis 341 (5768)
● **Tryptycenes**



- Ring Synthesis 176, 178, 179
● **Ureas**
- Synthesis 255 (5725)
- **Alkylideneureas**
- Synthesis 97
- ***N*-(1-Aminoalkylidene)-ureas**
- Synthesis and Cyclization Reactions 123
- **1,1'-Carbonyl-bis[4-benzylidene-1,4-dihydropyridine]**
- Synthesis and Reactions 485
- **Cyanoureas**
- Synthesis 102
- ***N,N'*-Diadamantylureas**
- Synthesis 473
- ***N,N'*-Dialkylureas**
- Synthesis 756
- ***N*-Dichloromethylene-*N'*-phosphonylureas**
- Synthesis 101
- ***N*-Dichloromethylene-*N'*-sulfonylureas**
- Synthesis 101
● **Valoron®**
- Synthesis 773
● **Vitamin B$_{12}$**
- Reactions 1000
● **(±)-Xylopinine**
- Synthesis 847
● **Ynamines**
- Cyclization Reactions 189, 191, 195, 339 (5760), 787, 794, 960 (5940)

REACTION INDEX

● Acetal Cleavage
- *O,O*-Acetals
- with Chlorotrimethylsilane/Sodium Iodide 80 (5672)
- *S,S*-Acetals
- Oxidative Cleavage 657, 659
- with Mercury Compounds/Water 561
● Acetalization
- Aldehydes and Ketones
- with Alcohols 404
- with Alkanedithiols 734, 754
- with Alkylthiotrimethylsilanes 866
- with Tris[methylseleno]-borane or Tris[phenylseleno]-borane 1044 (5961)
● Acetoxylation-Arylselenylation
- Alkenes 1047 (5973)
● Activation of Functional Groups
- −COOH
- as Acyl Carbamimidates 385
- as Acyl Carbonates 385
- as Acyl Diphenylphosphinates 385
- as *N*-Acylimidazoles 159 (5691), 162 (5699)
- as *N*-Acyl-2-oxo-1,3-thiazolidines 81 (5675)
- as 2-Acyloxypyridines 140
- as *N*-Acyloxysuccinimides 858 (5915)
- Alcoholic −OH
- as 2-Alkoxy-1,3-benzoxazoles 675 (5872)
- as *O*-(2-Benzimidazolyl) Derivatives 585 (5836), 859 (5919)
- $-NH_2$
- as Pyridinium Salts 159 (5690)
● *C*-Acylation
- Reductive Acylation of C=C Groups 161 (5696), 338 (5759)
- Replacement of Aromatic Hydrogen 140, 250 (5710), 347, 348, 352
- Replacement of Carboxy Groups 159 (5691)
- Replacement of Enolic Hydrogen 669 (5854)
- Replacement of Hydrogen in 1,3-Thiazole Derivatives 800
- Replacement of Hydrogen via Metallation 82 (5678), 874
- Replacement of Olefinic Hydrogen 762 (5886), 1044 (5960)
- Replacement of Si-Functions 337 (5754)
● *N*-Acylation
- Replacement of Hydrogen 57, 307, 322, 352, 924
- Replacement of P-Functions 614
● *O*-Acylation
- Replacement of Enolic Hydrogen 83 (5679), 250 (5710), 421 (5792)
- Replacement of Hydrogen 352, 402, 485
● *S*-Acylation
- of Thioacridanones 850
- Replacement of Hydrogen 352
● *C*-Acyloxylation
- Replacement of Hydrogen using Lead(IV) Carboxylates 336 (5753)
- Replacement of Hydrogen using Peroxydisulfate/Copper(II) Acylates 477
- Replacement of Hydrogen via Alkene-Palladium Complexes 498 (5804)
● *C*-Acylthiolation
- Replacement of Halogen 322
● Aldol Reaction 640, 650, 734
- Indirect Aldol Reactions 158 (5688) (5689)
● *C*-(1-Alkenylation)
- Indirect Replacement of Hydrogen 336 (5753)
- Reductive 1-Alkenylation of 3,4-Epoxy-1-alkenes 872
- Replacement of Halogen 334 (5747), 418 (5783)
- Replacement of Hydrogen via Metallation 251 (5713)
- Replacement of N-Functions 669 (5855)
- Replacement of O-Functions 336 (5753), 975
● *N*-(1-Alkenylation)
- Replacement of Hydrogen 337 (5655)
● *O*-(1-Alkenylation)
- Replacement of Phenolic Hydrogen 847
● *C*-(2-Alkenylation)
- of 2-Formyl-1,3-dithians 625
- Reductive 2-Alkenylation of Aldehydic or Ketonic Carbonyl Groups 584 (5832) (5833)
- Replacement of O-Functions 956 (5928)
● *S*-(2-Alkenylation)
- of Thioacridanones 850
● *C*-Alkoxycarbonylation
- Methane 350
- Replacement of Halogen 341 (5766), 351, 409, 573
● *N*-Alkoxycarbonylation
- Replacement of Hydrogen 924
● *C*-Alkoxylation
- Furans 950
- Lactams 315
- of C=C Groups 916
- Replacement of S-Functions 1014
- Replacement of Hydrogen via Alkene-Palladium Complexes 498 (5804)
- Replacement of Nitro Groups 613
● *C*-Alkylation
- *C*-Alkylation of 1-Alkenes via Palladium Complexes 598 (5804)
- α-Alkylation of Benzylamines 811
- α-Alkylation of α-Hydroxyketones 36
- Allylic Replacement of Hydrogen 340 (5765)
- Allylic Replacement of O-Functions 77 (5661), 337 (5756), 671 (5860)
- Indirect Replacement of Hydrogen 336, (5752) [1090] (5753), 910
- of Enol Silyl Ethers with *O*−*Si* Cleavage 251 (5714)
- Reductive Alkylation of Aldehydic or Ketonic Carbonyl Groups 561
- Reductive Alkylation of Carboxylic Ester Groups 561, 816, 877
- Reductive Alkylation of C=C Groups 81 (5674), 586 (5838), 1041 (5952)
- Reductive Alkylation of C≡C Groups 334 (5745), 1090
- Reductive Alkylation of 3,4-Epoxy-1-alkenes 872
- Reductive Alkylation of Lactone Carbonyl Groups 301
- Replacement of Acidic Hydrogen 249 (5707), 421 (5792), 453, 565, 761 (5885)
- Replacement of Aliphatic Hydrogen via Metallation 160 (5693), 499 (5806), 1043 (5957)
- Replacement of Aromatic Hydrogen via Metallation 420 (5787)
- Replacement of Halogen 333 (5743), 334 (5747)
- Replacement of Halogen via Metallation 945
- Replacement of Hydrogen in 1,3-Thiazole Derivatives 800
- Replacement of N-Functions 669 (5855), 833
- Replacement of O-Functions 335 (5749) (5750), 336 (5753), 671 (5860)
- Replacement of S-Functions 77 (5663), 334 (5746)
- via Friedel-Crafts Type Reactions 346, 347, 348
● *N*-Alkylation
- Quaternization of Imines 304
- Indirect Replacement of Hydrogen 295
- Permethylation 743
- Replacement of Hydrogen 249 (5707), 349, 421 (5790), 571, 717, 852, 928
- Replacement of Metals 1001
● *O*-Alkylation
see also: Esterification, Etherification
- of Carboxamides 855 (5906)
- Replacement of Acyl Groups 954, 1091
● *S*-Alkylation
- *O*-Alkyl Dithiocarbonate Salts + Alkyl Halides 375, 714
- Sulfinic Acids + Alkylsulfonium Salts 928
- Thioacridanones 850
- Thiocarboxamides 855 (5906)
- Thiols + Alkyl Halides 113, 249 (5707), 952
● *C,N*-Alkylation-Arylation
- Nitriles 889
● Alkylation-Chlorination
- Arenes 616
● *C*-Alkylidenation
see also: Carbonyl Olefination
- Carbonyl-Methylene Condensation 41, 297, 640, 650, 806, 901
- Replacement of Hydrogen via Metallation 799
- Indirect Replacement of Hydrogen 336 (5752) [1090]
- 5-Oxo-4,5-dihydro-1,3-oxazoles 836
- 4-Oxotetrahydro-1,3-thiazoles 839
● *C*-Alkylselenylation
- Replacement of Halogen 225, 227
● *C*-Alkylsulfenylation
- *CH*-Acidic Compounds 412
- Alkanephosphonic Esters 127
- Alkyl Ketones 918
- C=C Groups 121
- Hydrazones of Enolizable Ketones 164 (5706)
- Indolizines 886
- Replacement of Halogen 225, 227, 342 (5771), 952, 964
- Replacement of N-Functions 586 (5840)
● *C*-Alkylthiocarbonylation
- Replacement of Hydrogen 959 (5939)
● *O*-Alkylthiomethylation
- Alcohols 959 (5938)
● *C*-(1-Alkynylation)
- Allylic Replacement of O-Functions 418 (5781)
- Replacement of Halogen 628
● Amidation
- Carboxylic Acids
- with Ammonia or Amines 385, 548, 661
- with Hexamethylphosphoric Triamide 995
- Carboxylic Acids as Reactive Derivatives
- with Amines 719

- ● *C*-(2-Amidinoethylation) 893
- ● *C*-Amination
- Additive Amination of C≡C Triple Bonds 880
- 3-Amination of 1-Alkenes via Palladium Complexes 498 (5804)
- Replacement of Acidic Hydrogen via Metallation 801
- Replacement of Halogen 40, 880, 966
- Replacement of O-Functions 579, 966, 996, 1045 (5964)
- Replacement of S-Functions 390, 881
- ● Amination-Nitroxylation
- Alkenes 818
- ● *C*-(1-Aminoalkylation)
- Reductive 1-Aminoalkylation of C=C Groups 305
- ● *C*-Aminocarbonylation
- Replacement of Halogen 341 (5766), 764 (5893)
- ● *C*-Aminomethylenation
- Indoles 729
- Methyl Groups 479
- ● *N*-Aminomethylenation 471
- ● Arbuzov Reaction 456, 906
- ● Aromatization of Cyclic Systems
- 1,4-Cyclohexadienes
- Oxidative Aromatization 579
- Cyclohexenes
- Oxidative Aromatization 198
- Cyclohexenone Oximes
- by Semmler-Wolff Reaction 483, 887
- 2-Cyclohexenones
- with Bromine 814
- 4,5-Dihydroimidazoles
- with Barium Permanganate 489
- ● *C*-Arylation
- Indirect Arylation of 1-Cycloalkenyl Sulfides 336 (5753)
- Indirect Arylation of Thian-4-ones 910
- Reductive Arylation of Aldehydic or Ketonic Carbonyl Groups 561
- Reductive Arylation of Carboxylic Ester Groups 561, 877
- Reductive Arylation of C=C Groups 291, 586 (5838)
- Reductive Arylation of C=N Groups 457
- Reductive Arylation of 3,4-Epoxy-1-alkenes 872
- Replacement of B-Functions 672 (5862)
- Replacement of Halogen 104, 333 (5743), 334 (5747), 347
- Replacement of N-Functions 669 (5855)
- Replacement of O-Functions 336 (5753)
- Replacement of Olefinic Hydrogen 419 (5785)
- Replacement of S-Functions 77 (5663)
- ● *N*-Arylation
- Replacement of Hydrogen 215
- ● *O*-Arylation
see also: Etherification
- Replacement Alcoholic Hydrogen 613
- ● *P*-Arylation
- to give Phosphonium Salts 552
- ● *C*-Aryloxylation
- Replacement of Halogen 114, 921
- Replacement of N-Functions 159 (5690)
- ● *C*-Arylselenylation
- C=C Groups 664
- 2-Cyclohexenones, via Metallation 1036
- Methyl Groups 72
- ● *C*-Arylsulfenylation
- Alkanals at C-2 500 (5808)
- Alkanephosphonic Esters at C-1 127
- 2-Alkenamidines at C-3 121
- Alkyl Ketones at C-α 918
- Methyl Groups 72
- Replacement of Halogen 114, 342 (5771), 952
- Replacement of N-Functions 159 (5690)
- α,β-Unsaturated Carbonyl Compounds at C-β 1042 (5953)
- α,β-Unsaturated Carbonyl Compounds at C-γ 503 (5817)
- β,γ-Unsaturated Carbonyl Compounds at C-γ 503 (5817)
- ● *N*-(1-Arylthioalkylation)
- Replacement of Hydrogen 1025
- ● Asymmetric Synthesis
- Secondary Alcohols
- by *C*–*C* Coupling in the Presence of Chiral Additives 422 (5793)
- by Fermentation Processes 50
- by Reduction in the Presence of Chiral Additives 760 (5882)
- by Reduction using Chiral Reducing Agents 249 (5708)
- Alkanoic Acids
- using Chiral Reaction Components 586 (5838)
- 2-Alkylcycloalkanecarboxylates
- using Chiral Reagents 417 (5780)
- α-Aminocarboxylic Acids
- by Hydrogenation Reactions using Chiral Ligands 504 (5821)
- from Chiral Precursors 768 (5903)
- Dialkyl Ketones
- via Intermediate Introduction of Chiral Groups 160 (5693), 499 (5806)
- *vic*-Diols
- by Fermentation Processes 50
- α-Hydroxyaldehydes
- using Chiral Reaction Components 674 (5868)
- 2-Hydroxyalkanoic Acids
- using Chiral Reaction Components 857 (5912)
- Lactones
- from Chiral Precursors 50
- 3-Oxo-2-butylmalonic Esters
- using Chiral Reaction Components 856 (5910)

- ● Beckmann Fragmentation 45
- ● Beckmann Rearrangement 133, 222, 229, 960 (5942)
- ● Benzilic Acid Rearrangement 74
- ● *C*-Benzylation
see also: C-Alkylation
- Replacement of Halogen 334 (5747)
- ● *C*-Bis[alkoxycarbonyl]-methylation
- of *p*-Benzoquinone 111
- Enamines 504 (5819)
- Reductive Bis[alkoxycarbonyl]-methylation of C=C Groups 27, 148
- ● *C*-Bromination
- Additive Bromination of C=C Groups 143
- Additive Bromination of C≡C Groups 143
- Brominative Ring Cleavage of Oxiranes 581 (5823)
- Replacement of Al-Functions 760 (5880)
- Replacement of Carboxy Groups 668 (5851)
- Replacement of Carboxylic Hydroxy Groups 1045 (5963)
- Pyridine 378
- Replacement of Aldehydic Hydrogen 581 (5824)
- Replacement of Aliphatic Hydrogen 143, 148, 322, 355, 487
- Replacement of Aromatic Hydrogen 319, 487, 882
- Replacement of N-Functions 582 (5826), 583 (5828)
- Replacement of O-Functions 340 (5763), 343 (5774), 456, 667 (5850), 746, 759 (5879), 935, 936
- Replacement of Other Halogens 319
- Replacement of S-Functions 843
- Thiophenes 1021
- ● Bromochlorination
- C=C and C≡C Groups 144
- ● Bromofluorination
- Alkenes and Alkynes 759 (5878)
- ● Capping of Nucleic Acids 556
- ● Carbonylation (with Carbon Monoxide)
- 1,3-Alkadienes + Methyl Iodide 339 (5762)
- Alkanes 350
- Arenes 351
- *o*-Bromobenzyl Alcohols 882
- Cyclocarbonylation of 2-Bromo-2-alkenamines 587 (5843)
- Diazene-Palladium Complexes 787
- *o*-Haloarylalkanols 344 (5775)
- ● Carbonyl Olefination
- Aldehydes and Ketones
- with Bromotrichloromethane/Hexamethylphosphorous Triamide 554
- with 1-Lithioalkylboranes 253 (5720)
- with 1-Lithioalkylphosphine Oxides 498 (5803)
- with α-Lithio-α-silylnitriles 252 (5718)
- with Phosphonic Esters 593, 856 (5908)
- with Phosphoranes or Phosphonium Salts 158 (5687), 338 (5758), 764 (5892), 872, 950, 1015
- with 1-Silylalkanephosphonic Esters 79 (5669)
- with *O,O,S*-Trialkyl Phosphorothioates 857 (5913)
- Carboxylic Esters
- with Phosphoranes or Phosphonium Salts 418 (5782)
- Cyclizing Olefination of *vic*-Dicarbonyl Compounds
- with Phosphoranes or Phosphonium Salts 238
- Enolates
- with Phosphoranes 957 (5930)
- 2,5-Dihydroxytetrahydrofurans (Hemidials)
- with Phosphoranes or Phosphonium Salts 950
- ● Carbonyl 1,2-Transposition 272, 620
- Alkylative Carbonyl 1,2-Transposition 765 (5896)
- ● *C*-Chlorination
- Additive Chlorination of Arenes 93
- 3-Chlorination of 1-Alkenes via Palladium Complexes 498 (5804)
- Chlorinative Cleavage of 1,3-Dioxolanes 340 (5763)
- Chlorinative Ring Cleavage of Oxiranes 581 (5823)
- 1,3-Dithian 164 (5705)
- Pyridine 378
- Replacement of Aliphatic Hydrogen 355, 494
- Replacement of Aromatic Hydrogen 494
- Replacement of Carboxylic Hydroxy Groups 1044 (5962), 1045 (5963)
- Replacement of N-Functions 582 (5826)
- Replacement of O-Functions 365, 594, 667 (5850), 746
- Squaric Acid 963, 977
- Tetrahydrofuran 343 (5774)
- ● Chlorofluorination
- C=C and C≡C Groups 759 (5878)
- ● Chlorohydroxylation
- Alkenes 250 (5712)
- ● *C*-Chlorosulfonylation
- Indirect Replacement of O-Functions 285
- ● Claisen-Cope Rearrangements 48, 253 (5721), 342 (5770), 652
- ● *C*–*C* Coupling Reactions not involving Oxidation or Reduction
- Aldehydes + 2-Alkenoic Acids or Esters + Irradiation 490
- 1-Alkenyl Silyl Ethers + Alkyl Halides or Acetates + $ZnCl_2$ 941
- Diazomethyl Ketones + $Cu(acac)_2$ 82 (5677)
- 2-Haloalkanoic Esters + Lithium α-Lithiocarboxylates 710
- ● criss-cross Cycloaddition 785, 792
- ● *C*-Cyanation

- 1-Alkenes and 1-Alkynes via Metallation 150
- Indirect Cyanation of Pyridine 694
- Replacement of Halogen 83 (5681), 287, 299
- Replacement of O-Functions 300, 1007
- ● *N*-Cyanation
- Replacement of Hydrogen 123
- ● *Si*-Cyanation
- Replacement of Halogen 460
- ● *N*-(2-Cyanoalkylation)
- Replacement of Hydrogen 410
- ● *S*-(2-Cyanoalkylation)
- Replacement of Hydrogen 411
- ● Cyanohydrin Synthesis
- using Cyanotrimethylsilane 861
- ● Cyanosilylation
- Aldehydes and Ketones 861
- *p*-Benzoquinones 863
- Imines 863
- ● Cycloaddition (intermolecular)
- [2+1] Cycloaddition
- C–C + N 651
- [2+2] Cycloaddition
- N–C + S–C 786
- N–C + C–C 103, 786, 933
- C–C + C–C 168–208, 339 (5761), 783, 784
- [2+2+2]-Cycloaddition
- N–C + S–C + S–C 786
- O–C + O–C + C–C 871
- C–C + C–C + C–C 29
- [3+2] Cycloaddition
- O–N–C + C–C 252 (5717)
- N–C–C + O–C 870
- C–N–C + C–C 779, 811
- C–C–C + C–C 957 (5929)
- [4+1] Cycloaddition
- S–C–C–S + C 115
- C–C–C–C + N 287
- [4+2] Cycloaddition
- C–N–C–C + C–C 787
- C–C–C–C + O–O 783
- C–C–C–C + O–C 492
- C–C–C–C + C–C 132, 165 (review), 297, 335 (5748), 1042 (5954), 1043 (5956)
- [5+1] Cycloaddition
- C–N–C–N–C + C 833
- ● Cycloaddition (intramolecular)
- O–C–C–C–C
- *o*-Hydroxystyryl Acetates + Acid + Methanol 58
- C–C–C–C–C
- Bis[1-alkenyl] Ketones + Lewis Acids 337 (5754)
- ● Cyclocondensation (intermolecular)
- General, C_n
- 1,2-Dilithiocycloalkane-1,2-dicarboxylic Esters + 1,ω-Dihaloalkanes 389
- General, O–C_n
- *o*-Haloarylalkanols + Carbon Monoxide + Base 344 (5775)
- to give Benzene Rings
- Arene-*o*-dicarboxaldehydes + 2,5-Dimethoxytetrahydrofuran 689
- C–C–C
- C–C + C 742
- O–C–N–C
- C–N–C + O 571
- S–C–S–C
- S–C–S + C 907
- N–C–C–C
- N–C–C + C 258 (5735), 587 (5843)
- O–C–C–C
- O–C + C + C 503 (5818)
- C–C–C–C
- C–C–C + C 325
- N–N–C–N–C
- N–N–C + N–C 311
- S–S–C–S–C
- S–C–S + S–C 907
- N–C–N–C–C
- N–C–C + N–C 311
- N–C–C–N + C 1001
- C–N–C–C + N 473
- O–C–N–C–C
- N–C–C + O–C 50
- C–N–C + O–C 256 (5729)
- S–C–N–C–C
- S–C–C + N–C 839
- S–C–S–C–C
- S–C–C–S + C 157 (5686)
- N–C–C–C–C
- N–C + C–C + C 900
- N–C–C + C–C 960 (5941)
- N–C–C–C + C 373
- O–C–C–C–C
- O–C–C + C–C 52, 676 (5874)
- C–C–C + O–C 762 (5886)
- O–C–C–C + C 290, 344 (5775) (5776), 882
- C–C–C–C–C
- C–C–C + C–C 251 (5715), 762 (5886), 957 (5930) (5931)
- C–C–C–C + C 267
- N–N–C–N–C–C
- C–N–C–C + N–N 473
- N–N–C–C–N + C 331
- O–N–C–N–C–C
- O–N–C + N–C–C 155
- N–C–N–C–N–C
- N–C–N + C–N–C 98, 101
- N–C–N–C–N + C 841
- N–N–C–C–C–C
- C–C–C–C + N–N 458, 689
- N–C–N–C–C–C
- N–C–N + C–C–C 379, 748
- N–C–C + C–N–C 97
- N–C–C–C + N–C 57, 311
- N–C–C–C–N + C 155
- N–C–C–N–C–C
- N–C–C + N–C–C 473
- O–C–N–C–C–C
- O–C–C + C–N–C 96
- O–C–C–C–N + C 506
- O–C–O–C–C–C
- O–C–C + O–C + C 724
- S–C–N–C–C–C
- S–C–N–C + C–C 453
- S–C–S–C–C–C
- S–C–C–C–S + C 424 (5800)
- N–C–C–C–C–C
- C–C–C + C–C + N 367
- N–C–C + C–C–C 373, 471, 1022
- C–C–C–C + N–C 597, 842, 996
- N–C–C–C–C + C 469
- C–N–C–C–C + C 479
- C–C–C–C–C + N 596
- O–C–C–C–C–C
- O–C–C + C–C–C 716, 726, 1022
- C–C–C–C + O–C 72, 500 (5810)
- O–C–C–C–C + C 344 (5776)
- C–C–C–C–C–C
- C–C–C + C–C–C 708, 814
- C–C–C–C + C–C 582 (5825), 689
- N–C–C–N–C–C–C
- C–N–C–C–N–C + C 1002
- O–C–C–C–C–C–C
- O–C–C–C–C–C + C 344 (5776)
- C–C–C–C–C–C–C
- C–C–C–C–C + C–C 31
- ● Cyclocondensation (intramolecular)
- General, C → C
- ω-Cyanoalkanamides + Lithium Diisopropylamide 252 (5716)
- to give Cycloalkenes
- 2,2'-Dihaloalkanedioic Esters + Base 543
- N–C–C
- *vic*-Azidohydroxyalkanes + Triphenylphosphine 84 (5684)
- O–C–C
- α-Haloketones + Ammonium Cyanides 83 (5680)
- 2-(2-Hydroxyalkoxy)-benzimidazole Derivatives + Base 859 (5919)
- N–C–C–C
- 3-Haloalkanamides + Base 258 (5734)
- C–C–C–C
- 2,5-Dihaloalkanedioic Esters + Base 543
- O–C–N–C–C
- *N*-(2-Hydroxyalkyl)-carboxamides, Cyclodehydration 63
- Reissert Compounds + Lewis Acids 384
- N–C–C–C–C
- 1,4-Aminobromo Compounds + Base 341 (5768), 343 (5773)
- *N*-(2-Nitroalkyl)-oxamic Esters + Base 268
- O–C–C–C–C
- 4-Alkenoic Esters + Acid 258 (5736)
- 3-Amino-2-alkenyl Ketones + Acid 504 (5819)
- 1-Aryloxyalkyl Ketones + PPA 223
- Hetero-Substituted 4,5-Diacylcyclohexenes + PPA 132
- 4-Siloxyalkanenitriles + Aqueous Acid 588 (5846)
- 3-Sulfonylalkyl Carbonates + Base 860 (5920)
- C–C–C–C–C
- 1,4-Alkanediones + Base 408
- 2-Arylalkyl Ketones + PPA 222
- 3-Arylpropanoic Acids + PPA 222
- *o*-(2-Nitroalkyl)-arenecarboxylic Acids or Esters + Acid or Base 267, 268
- 4-Oxoalkanals + Base 583 (5829)
- O–C–N–C–C–C
- *N*-(3-Hydroxyalkyl)-carboxamides, Cyclodehydration 63
- N–C–N–C–C–C
- *N'*-Aminocarbonyl-2-alkoxycarbonylalkanamidines, Thermal Cyclization 123
- *N'*-Cyano-2-alkoxycarbonylalkanamidines, Base-Catalyzed Cyclization 123
- N–C–C–C–C–C
- 5-Aminoalkanols + Triphenylphosphine/CCl_4/Triethylamine 387
- 3-Anilino-*N*-phenyl-2-alkenimines, Thermal Cyclization 326
- *N*-Phenethylcarboxamides + PCl_5 1021
- *N*-Styrylacetimidic Chlorides, Thermal Dehydrochlorination 70
- O–C–C–C–C–C
- Aryliphatic 1,5-Diols + Acid 301
- Chalcone Ethers + Acid 268
- C–C–C–C–C–C
- Activated 1-Alkenyl Alkyl Ketones + Base 27
- Coumarin-4-butanoic Acids + PPA 716
- 4,4-Dialkoxyalkyl Ketones + Acid 583 (5829)
- 1-(2-Hydroxyphenyl)-1,3-dioxo-3-phenylpropanes + Acid 874
- N–C–N–C–C–C–C
- 1-Hydroxy-2-benzylaminomethyl-1,3-dihydroisoindoles + Acid 404
- N–C–C–N–C–C–C
- 3-(2-Aminophenyliminomethyl)-chromones + Acid 701
- N–C–C–C–C–C–C
- Lithium *o'*-Bromo-1,2-diphenylethane-*o*-carboxylates + Alkyllithium 455
- ● Cyclodehydrogenation (intermolecular)
- S–C–C–N–C–C
- 2-Aminothiophenol + 1,4-Naphthoquinones + $FeCl_3$ 313
- ● Cyclodehydrogenation (intramolecular)
- S–N–C–C–C
- 2-Iminocycloalkanedithiocarboxylic Acids + Iodine 567
- N–C–C–C–C
- *N'*-(4-Alkenoyl)-hydrazinecarboxylic Esters + MnO_2 767 (5900)

- N–C–C–C–C–C
- N'-(5-Alkenoyl)-hydrazinecarboxylic Esters + MnO_2 767 (5900)
- O–C–C–C–C–C
- *o*-Cinnamylphenols + Iodine 618
- C–C–C–C–C–C
- 1-Benzylisoquinoline Derivatives + Diphenyl Selenoxide 497 (5801)
- 1,2-Bis[pyrazinyl]-ethylene + Irradiation + Oxygen 116
- C–C–C–C–C–C–C
- 1-(2-Phenylethyl)-isoquinoline Derivatives + Diphenyl Selenoxide 497 (5801)

● Cyclopropanation
- 2-Alkenals 762 (5888)
- 2-Alkenenitriles 642
- Alkenes 690
- 2-Alkenoic Esters 642
- 1-Alkenyl Ketones 34, 642, 762 (5888)
- 2-Bromo-3-oxo-Δ^1-steroids 742

● Deacylation
- *N*-Acyl Compounds, Electrochemical Deacylation 481

● Deacyloxylation
- Acyloxyalkenes 955 (5923) (5924)

● Dealkoxycarbonylation
- 2-Cyano-2-alkenoic Esters 160 (5694)
- α-Cyano-1,2,3,4-tetrahydroisoquinolin-1-ylidenacetic Esters 1020
- Malonic Esters 336 (5751)
- 3-Oxoalkanoic Esters 864
- 2-Sulfonyl-2-alkenoic Esters 806
- 1,1,1-Tricarboxylic Esters 502 (5813)

● Dealkylation
- *N*-Alkyl Compounds 421 (5791)
- *O*-Alkyl Compounds 638

● Dealkylsulfenylation 392

● Deamination
see: Hydrodeamination

● Dearylselenylation 501 (5811) (5812)

● Dearylsulfenylation 392, 499 (5807), 1042 (5953)

● Dearylsulfinylation 1048 (5974)

● Debromination
- *gem*-Dibromocyclopropanes, with Copper(0)-Isocyanide Complexes 338 (5757)

● Decarbonylation
- Carboxamides 249 (5709)
- Squaric Acid Esters 991

● Decyanation
– Oxidative Decyanation of α-Secondary Nitriles 1009

● Dehydration
- Aldoximes
- with Sulfuryl Chloride Fluoride 659
- 2-Alkenols
- Indirect Dehydration 668 (5853)
- Alkyl Ketones
- with 2-Chloro-1,3-benzoxazolium Salts 417 (5779)
- Carboxamides
- with Trichloro-1,3,5-triazine 657
- 1,2-Dihydroxyindanes
- Acid-Catalyzed Dehydration 622
- 1,2-Dihydroxytetralins
- Acid-Catalyzed Dehydration 622
- Formamides
- with Phosphoryl Chloride/Amines 69
- Primary and Secondary Alcohols
- with Sulfonyl Chlorides/Amines 588 (5846)

● Dehydroamination
- 3-Aminopropenenitriles 1045 (5964)

● Dehydrocyanation
- 2-Aminoalkanenitriles 320

● Dehydroiodination
- 3-Iodochromans 618

● Dehydroxylation
- *vic*-Dihydroxyalkanes 668 (5853)

● Dehydroxylation-Desulfonyloxylation
- *vic*-Hydroxysulfonyloxy Compounds 47

● Denitrosation
- *N*-Nitroso Compounds
- Reductive Denitrosation 741

● Deoxygenation
- Epoxides
- Two-Stage Deoxygenation with Trifluoroacetic Anhydride/Lithium Halide and Sodium Iodide 1039 (5944)
- with 3-Methyl-2-selenoxo-2,3-dihydro-1,3-benzothiazole 636
- with Triphenylphosphine Hydroiodide + Triphenylphosphine Diiodide 828
- *N*-Oxides
- with Complex Borohydrides 1048 (5975)
- with Molybdenum(III) Reagents 129
- with Phosphorus(III) Compounds/Iodine/Iodide 255 (5726)
- with Trialkylamine-Sulfur Dioxide 660
- *P*-Oxides
- with Trichlorosilane 504 (5821)
- Sulfoxides
- with Iodotrimethylsilane 865
- with Phosphorus(V) Chloride/1-Morpholinocyclohexene 67
- with Phosphorus(III) Compounds/Iodine/Iodide 255 (5726)
- with Trichloro-1,3,5-triazine 221
- with Trifluoro-1,3,5-triazine 221

● Desilylation
- *C*-Silyl Compounds 256 (5730), 422 (5793)

● Desulfinylation
- Hydroxyalkyl Phenyl Sulfoxides 582 (5827)

● Desulfonylation
- *C*-Sulfonyl Compounds
- with Aluminum Amalgam/Protic Systems 481
- N^{im}-Sulfonyl Compounds
- using Acetic Anhydride/Pyridine 960 (5943)

● Desulfonyloxylation
- Reductive Cleavage 48, 50

● *C*-Deuteration
- Reduction of Arenediazonium Salts with Thiophenol-*S*-*d* 855 (5907)
- 1,3-Thiazole Derivatives 800

● *N*-Deuteration
- Primary Amines 400

● *Sn*-Deuteration
- Replacement of Hydrogen 942
- Replacement of Carboxy Groups 909

● *C,N*-Dialkylation
- Nitriles 889

● *C,N*-Diarylation
- Nitriles 889

● Diazo-Group Transfer
- Cycloalkanones + 2,4,6-Triisopropylbenzenesulfonyl Azide 368

● *C*-(1,2-Dichlorovinylation)
- Enolizable Carbonyl Compounds 956 (5926)

● Diels-Alder Reactions
- with Alkynes 339 (5760); see also 165ff., 769ff.
- with Arenes, Vinylarenes, and Hetero Analogs 165 (review), 769 (review)
- Catalyzed Diels-Alder Reactions 335 (5748)
- Regioselective Diels-Alder Reactions 1042 (5954), 1043 (5956)
- with Functionally Substituted Dienes 132
- with Furans 57
- with Hetero-Dienophiles 173, 186, 202, 207, 209, 238, 772, 773, 788–793
- with Oxygen 788, 789, 790, 793

● *C*-(1,3-Dithianylation)
- Reductive 1,3-Dithianylation of C=C Groups 502 (5815)
- using 2-Chloro-1,3-dithian 164 (5705)

● "domino"-Diels-Alder Reactions 200

● *C*=*C* Double-Bond Shifts
- Alkenes 257 (5732)
- 2-Alkenyl Ketones 339 (5760)

● Epoxidation
- Alkenes
- with Hexafluoroacetone/Hydrogen Peroxide 810
- with Organic Peroxoic Acids 58, 257 (5733)
- with Silyl Hydroperoxides 675 (5873)
- 2-Alkenyl Ketones
- with Hydrogen Peroxide 37
- 3-Alkylidene-2-oxoazetidines
- with Organic Peroxoic Acids 588 (5845)

● Ester Cleavage
- Carboxylic Esters
- Hydrolytic Cleavage 579, 1043 (5959)
- Photochemical Cleavage 2
- via Silyl-Transesterification-Hydrolysis 546
- with Chlorotrimethylsilane/Sodium Iodide 80 (5672)
- with Complex Aluminum Hydrides 318
- with Hydrogen Chloride 453
- with Iodotrimethylsilane 84 (5682), 863
- with Sodium Superoxide/Dimethyl Sulfoxide 958 (5934)

● Esterification
- Amino Acids
- with Alkyl Sulfonates 676 (5877)
- Carboxylic Acids (and Salts)
- with Alcohols or Phenols 548, 674 (5870)
- with Alkyldiarylsulfonium Salts 926
- with Alkyl Halides 538
- with Phenacyl Halides 10
- Carboxylic Acids as Reactive Acid Derivatives
- with Alcohols 485, 502 (5814)
- Phosphinic Acids
- with Alkyl Halides 632
- Phosphoric Acid Diesters
- with 2-Alkoxy-1,3-benzoxazoles 675 (5872)
- Squaric Acid
- with Alcohols or Diazoalkanes 963

● Ether Cleavage
- General 865
- 2-Alkoxy-1-alkenyl Ketones 118
- Alkyl Aryl Ethers 80 (5672), 159 (5692), 638
- Diaryl Ethers 634
- Enol Ethers 856 (5908)

● Etherification
- Alcohols + Alkyl Halides 79 (5668)
- Alcohols + Diazoalkanes 670 (5859)
- Alcohols + Dimethyl Sulfoxide + Chlorotrimethylsilane 670 (5858)
- Diols + 4-Nitrophthalodinitriles 613
- Phenols + Alkanal *O,O*-Acetals 847
- Phenols + 1-Alkenyl Ethers 847
- Phenols + Alkylsulfonium Salts 928
- Phenols + Alkyl Halides 249 (5707)
- Phenols + Halopyridines 921
- Phenoxides + Alkyl Mesylates 727

● Exchange of Hetero Atoms
- O/N Exchange
- in Heterocyclic Rings 853
- O/S Exchange
- in Squaric Acid Derivatives 977

● *C*-Fluorination
- Replacement of Carboxylic Hydroxy Groups 1045 (5963)
- Replacement of N-Functions 670 (5857)
- Replacement of O-Functions 667 (5850)
- Replacement of Other Halogens 90, 419 (5784)

● Fluoroiodination

- Alkenes and Alkynes 759 (5878)
● **Fluoronitration**
- Alkenes 759 (5878)
● ***C*-Formylation**
- Arenes 351
● **Fragmentation Reactions (*C*–*C* Cleavage)**
- Alkenes 761 (5883)
- Cyclic *vic*-Aminonitryloxyalkanes 818
- Cyclopropylcarbinols 673 (5865)
- 4,5-Diamino-*o*-benzoquinones 371
- *gem*-Dihalocyclopropanes 338 (5757)
- *vic*-Diols 581 (5822)
- 5,6-Disubstituted 3,4-dihydro-2*H*-pyrans 65
- α-Hydroxyketoximes 45
- 8a-Hydroxy-5-oxohexahydrochromanes 998
- 2-Nitrocycloalkanones 273
- 1-Siloxyalkyl Ketones 959 (5937)
- Tetraarylethylenes 784
● **Friedel-Crafts Reactions**
- using Antimony(V) Halides as Catalysts 345 (review)
- with Dihalocyclobutenediones 976

● ***C*-(1-Haloalkylation)**
- Reductive 1-Haloalkylation of Ester Carbonyl Groups 644
● **Hofmann Degradation of Carboxamides**
- to Isocyanates 87
● **Hunsdiecker Reaction** 668 (5851)
● **Hydration**
- Alkenes 154
- Cyanamides 123
- Nitriles 243, 958 (5934)
● **Hydroalumination**
- Alkenes 81 (5674)
- Alkynes 1034
● **Hydroboration**
- **Alkenes**
- with Borane-Dimethyl Sulfide 151
- with Borane-1,4-Oxathiane 154
- with Secondary Boranes 152
- **Non-Conjugated Alkenynes**
- with Secondary Boranes 1046 (5968)
● **Hydrobromination**
- 1-Alkynes 805
● **Hydrodeamination**
- 2-Amino-1-alkenyl Ketones 1044 (5960)
- α-Aminocarboxylic Acid Derivatives 69
- Primary Amines 79 (5667)
● **Hydrodebromination**
- General 425 (review)
- **Bromoarenes**
- by Catalytic Hydrogenation 330
- with Complex Borohydrides 77 (5662)
- **Functionally Substituted Bromoalkanes**
- with Trialkylstannanes 857 (5912)
- **Quinol Bromides**
- with Isopropanol 495
● **Hydrodechlorination**
- General 425 (review)
- Acyl Chlorides 1043 (5958)
- Chloroindoles 365
● **Hydrodefluorination** 425
● **Hydrodeiodination** 425 (review), 857 (5912), 1037
● **Hydrofluorination**
- Alkenes and Alkynes 759 (5878)
● **Hydrolysis of Functional Groups**
- 2-Aminoalkanenitriles 414
- Carboxylic Acid Hydrazides 314
- Enethiol Ethers 164 (5706)
- Nitriles 395
- Oximes 417 (5778)
- Trichloromethyl Group 494
● **Hydrosilylation**
- Alkynes 256 (5730)
● ***C*-(1-Hydroxyalkylation)**
- Alkanoic Esters 340 (5764)
- Alkyl Ketones 333 (5744)
- 2-Oxoazetidines 247
- Replacement of Acetylenic Hydrogen 422 (5793), 1046 (5969)
- Replacement of 2-H in 1,3-Dithians 734
- 1,3-Thiazole Derivatives 800
● ***C*-(2-Hydroxyalkylation)**
- Reductive 2-Hydroxyalkylation of Alkynes 1034
● ***C*-Hydroxyarylation**
- Reductive Hydroxyarylation of Ketones 420 (5788)
● ***C*-Hydroxycarbonylation**
- Alkanes 350
- Replacement of Alcoholic OH 351
- Replacement of Halogen 328, 341 (5766), 351
- 1,3-Thiazole Derivatives 800
● ***C*-(2-Hydroxyethylation)**
- Indirect Replacement of Halogen 762 (5887)
● **Hydroxy-Group 1,3-Transposition** 668 (5852), 1011
● ***C*-Hydroxylation**
- 3-Hydroxylation of 1-Alkenes via Palladium Complexes 498 (5804)
- Replacement of Acetylenic Hydrogen 672 (5864)
- Replacement of Aliphatic Hydrogen 825
- Replacement of Aromatic Hydrogen 124
- Replacement of Metals 859 (5918)
● **Hydrozirconation**
- Alkynes 1040 (5949)

● **Inversion of Configuration**
see: Stereoisomerization
● ***C*-Iodination**
- Iodinative Cleavage of Lactones 864
- Replacement of Acetylenic Hydrogen 672 (5864)
- Replacement of Al-Functions 760 (5880)
- Replacement of Aliphatic Hydrogen 500 (5808)
- Replacement of Aromatic Hydrogen 486
- Replacement of Carboxylic Hydroxy Groups 1045 (5963)
- Replacement of N-Functions 572, 582 (5826), 853
- Replacement of O-Functions 667 (5850), 1037
- Replacement of Olefinic Hydrogen 592
- Replacement of Other Halogens 319, 823
● ***P*-Iodination**
- Replacement of Other Halogens 824

● **Knoevenagel Reaction** 806

● **Lactonization**
- via Reactive Acid Derivatives 502 (5814)

● **Meerwein Arylation** 291
● ***C*-Metallation**
- Hg/Li Exchange 859 (5918)
- Replacement of Aromatic Hydrogen by Lithium 420 (5787)
- Replacement of Halogen by Lithium 859 (5917)
● ***N*-Methylation**
- of *N*-Heteroarenes 217
● **Michael Addition** 27, 36, 317, 407, 413, 893

● **Neber Rearrangement** 329
● **Nef Reaction** [44], 407, 662
● ***C*-Nitration**
- **Aliphatic CH and CH_2 Groups (saturated)**
- with Nitric Acid 262
- with Nitronium Salts 355
- **Aromatic CH Groups**
- with Nitric Acid (or Mixtures) 663, 907
- **Enol *O*-Derivatives**
- with Acyl Nitrates 264
- with Nitronium Salts 264
- **3-Nitration of 1-Alkenes**
- via Alkene-Palladium Complexes 498 (5804)
● **Nitration-Nitrosation**
- Cycloalkenes 266
● ***N*-(2-Nitroalkylation)**
- Replacement of Hydrogen 884

● **Oxidation**
- **with Alkyl Hypochlorites**
- Aminoacetamides 322
- 3,6-Dichloro-4,5-diimino-3,6-dimethyl-1,2-cyclohexanediones 371
- **with Alkyllithium/Bis[2-pyridyl] Disulfide**
- Alkanal *S,S*-Acetals 587 (5842)
- **with Amine Oxides**
- 1,2-Dihydronaphthalenes, Indenes 622
- **with Bromates**
- Dialkyl Ethers and Alkyl Silyl Ethers 897
- **with Bromine**
- 1,4-Cyclohexadienes 579
- **with Chromium(VI) Compounds**
- 2-Alkenoic Esters 253 (5719)
- 2-Alkynols 460
- Cyclohexenes 198
- Oximes 126
- Primary and Secondary Alcohols 157 (5685), 223, 646, 691
- Trialkylboranes 152
- **with Diphenyl Selenoxide**
- Catechols 497 (5801)
- **with Hydrogen Peroxide**
- α-Hydroxyketones, Oxidative Cleavage 36
- Nitroalkanes 662
- 3-Oxoalkanaminium Salts 895
- Spin-Labelled Alkyl Aryl Sulfides 914
- **with Hypochlorites**
- Catechols 707
- Hydroquinones 706
- **with Lead(IV) Carboxylates**
- 2-Alkylidene-1,3-dithians 588 (5847)
- 2-Alkene-1,4-diols 543
- Phenols and 1-Naphthols 943
- **with Manganese(IV) Compounds**
- Endoperoxycarenes 821
- **with Nitric Acid or Nitrates**
- Benzyl Alcohols and Secondary Alcohols 849
- **with Organic Peroxoic Acids**
- 2-Alkenyltrialkylstannanes 1011
- 3-Oxoalkyl Sulfides 392
- **with Oxygen or Air**
- 2-(1-Alkenyl)-1-benzofurans 791
- 1-Alkylidenephenalenes 793
- 1-Aryl-1-alkenes 790, 793
- Cycloheptatrienes 820
- 1,2-Dihydronaphthalenes 789
- 2,5-Disiloxytricyclo[4.4.0.0^{2,5}]decanes 1024
- Indenes 788
- α-Secondary Nitriles 1009
- Tetraarylethylenes 784
- **with Periodic Acid or Periodates**
- β-Arylthiocarbonyl Compounds 336 (5752)
- 2,5-Dihydroxytricyclo[4.4.0.0^{2,5}]decanes 1024
- ω-Haloacetophenones 564
- 2-Hydroxyalkanoic Acids 564
- 2-Hydroxyalkyl 1-Siloxyalkyl Ketones 959 (5937)
- Thioethers 563
- **with Permanganate**
- Alkenes 761 (5883)
- 4,5-Dihydroimidazoles 489
- **with Potassium Ferrate**
- Benzyl Alcohols 254 (5722)
- **with Quinones**
- 1,2-Dioxo-1,2,3,8-tetrahydrocyclobuta[*b*]-quinoxalines 991

- with Selenium Dioxide
- 3-Arylpropenes 813
- Protoadamantanone 74
- with Selenium Dioxide/*t*-Butyl Hydroperoxide
- α-Pinene 456
- with Silver(I) Compounds
- 2,4-Alkadienals 816
- Hydroquinones 753
- with Silver(II) Compounds
- Hydroquinone Ethers 754
- with Tetrazolium Salts
- 21-Hydroxy-20-oxosteroids 739
- with Triphenylbismuth Carbonate
- Alcohols and *vic*-Diols 581 (5822)
- Hydrazines and Hydrazones 581 (5822)

● **Oxidative Coupling**
- ***C*–*C* Coupling**
- *prim*-Alkyl Silyl Ethers + Di-*t*-butyl Peroxide 80 (5670)
- Cyclohexanones + Butenone + Hydrogen Peroxide + Alcohols + $TiCl_3$ 752
- ***S*–*S* Coupling**
- 1-Amino-3-mercaptoalkanephosphonic Acids + Iodine 1032
- Thiols + Bromine/Base 32

● **Oxidative Decarboxylation**
- α-Hydroxycarboxylic Acids 74

● ***C*-(2-Oxoalkylation)**
- Reductive 2-Oxoalkylation of C=C Groups 414

● **Ozonization**
- Alkenes 807
- 1-Alkenylcyclopropanes 554
- Arylalkanols 50
- Dienes (conjugated) 807
- Enynes (conjugated) 807

● **Parham Cycloacylation** 454
● **Pechmann Cyclocondensation** 715
● **Peptide Coupling**
- Activated Acids + H_2N– 930
- Polymer-Based Peptide Synthesis 20
- using *N*-Hydroxysuccinimide + DCC 731

● **Perkov Reaction** 424 (6798)
● ***C*-Phosphinylation**
- Replacement of Halogen 972

● ***C*-Phosphonation**
- Replacement of O-Functions 906

● **Phosphorylation**
- Enols 335 (5749) (5750)
- Nucleosides 398, 831

● **Prins Reaction** 871
● **Protection of Functional Groups**
- in Monosaccharide Chemistry 13
- **Alcoholic –OH**
- by *O*-Acylation with 2-Dibromomethylbenzoyl Chloride 1043 (5959)
- by Alkoxycarbonylation 76
- by Silylation 234
- by Tetrahydrofuranylation 343 (5774)
- **–COOH**
- by Tetrahydrofuranylation 343 (5774)
- **Imidazole NH Group**
- by Tosylation 960 (5943)
- **>NH**
- by Reaction with 2-Benzylthio-5-oxo-4,5-dihydro-1,3-thiazole 81 (5673)
- by Tetrahydrofuranylation 343 (5774)
- **$-NH_2$**
- by Imine Formation 260 (5740)
- by Reaction with 2-Benzylthio-5-oxo-4,5-dihydro-1,3-thiazole 81 (5673)
- **OH in Sugar Derivatives**
- by Acylation 13
- by Borylation 935, 936
- **Phenolic –OH**
- by Acylation 58
- by Methoxymethylation 734
- by Tetrahydrofuranylation 343 (5774)
- **–SH**
- by Silylation 924
- by Tetrahydrofuranylation 343 (5774)

● **Protective Groups, Cleavage**
- Photochemical Cleavage of Protective Groups 1 (review)
- **Carbonyl-Protecting Groups**
- 1-(2-Nitrophenyl)-1,2-ethanediyl Group 5
- ***–COOH*-Protecting Groups**
- 8-Azido-4-methoxy-1-naphthylmethyl Group 13
- 1-(3,5-Dimethoxyphenyl)-2-oxo-2-phenylethyl Group 11
- 2,4-Dinitrobenzenesulfenyl Group 12
- 2,2′-Dinitrodiphenylmethyl Group 3
- 4-Methoxyphenacyl Groups 10
- α-Methylphenacyl Group 10
- 2-Nitroanilide Groups 12
- 2-Nitrobenzyl Group 2
- 2-Nitrodiphenylmethyl Group 2
- 2,2,2-Trichloroethyl Ester Groups 731
- ***N*-Protecting Groups**
- Benzyloxycarbonyl Group 6
- Benzylthiothiocarbonylaminoacetyl Group 81 (5673)
- *N*-Boc-peptide Esters 929
- 3,5-Dimethoxybenzyloxycarbonyl Group 6
- 2-(3,5-Dimethoxyphenyl)-2-propyloxycarbonyl Group 8
- 2,2′-Dinitrodiphenylmethoxycarbonyl Group 5
- α-Methylphenacyl Group 10
- 2-Nitrobenzyl Group 3
- 2-Nitrobenzyloxycarbonyl Group 4, 15
- 2-Nitrodiphenylmethoxycarbonyl Group 5
- Teboc Group 948
- **N^{im}-Protecting Groups**
- *N*-Tosyl Group 960 (5943)
- ***OH*-Protecting Groups**
- Alkoxycarbonyl Groups 76
- 2-(2-Azidophenyl)-ethyl Group 12
- *t*-Butyldimethylsilyl Group 84 (5683)
- *O*-(2-Dibromomethylbenzoyl) Groups 1043 (5959)
- 2-Haloalkyl Groups 847
- 4-Methoxytrityl Group 398
- 2-Nitrobenzyl Group 2, 14
- Silyl Groups 234
- Trityl Group 76
- ***P*–*OH*-Protecting Groups**
- Anilido Group 398
- 3,5-Dinitrophenoxy Group 9
- 2-Nitrobenzyl Group 19
- 3-Nitrophenoxy Group 9

● **Pummerer Reaction** 736

● **Reduction**
- **Catalytic Hydrogenation with Elemental Hydrogen in Heterogeneous Phase**
- 3-Alkene-1,2-diols 50
- Benzene 361
- Chloroindoles 365
- Chromenes 618
- Dehydrocholanamides 995
- *C*-Halo Compounds 426
- 1-Hydrazonoalkanephosphonic Esters 1029
- Methyl 6-Iodo-2,6-dideoxyhexopyranosides 1037
- Nitriles 802
- Nitroarenes 330
- 3-Oxoalkanethioic *S*-Esters 761 (5885)
- Phenols 763 (5889)
- Styryl Ketones 734
- **with Alcohols**
- Quinol Bromides 495
- **with Aluminum Amalgam/Protic Systems**
- 1-Alkenyl Aryl Sulfones 481
- *N*-Alkylphthalimides 404
- 6*H*-1,3-Thiazines 453
- **with Borane-Amines**
- 2-Oximinoalkanoic Esters and Amides (and *O*-Derivatives) 891
- **with Borane-Pyridine**
- *O*-Acyloximes 78 (5665)
- Aldehydes and Ketones 855 (5905)
- Oximes 78 (5664)
- **with Complex Aluminum Hydrides**
- 2-Acylfurans 136
- 3-Acyl-2-oxotetrahydro-1,3-thiazoles 81 (5675)
- 2-Alkenephosphonic Esters 456
- 2-Alkoxy-1-alkenyl Ketones 118
- 2-Alkynols 259 (5738)
- Benzoic Esters 734
- 1-Chlor-1-alkynes 760 (5880)
- Bis[3-oxoalkyl] Disulfides 910
- Cyclic *vic*-Aminonitryloxyalkanes 818
- Cyclic Imides 199
- *N*,*N*-Dialkylcarboxamides 995
- 1,1-Difluoroalkyl Isocyanates 107
- *C*-Fluoro Compounds 428
- *vic*-Hydroxysulfonyloxyalkanes 51
- Ketones 249 (5708)
- Non-conjugated Alkadiynediols 759 (5879)
- 5-Oxo-6-alkenoic Esters 27
- 2-Siloxy-3-alkenenitriles 863
- Trimethylsilylmethyl Carboxylates 318
- **with Complex Borohydrides**
- Acyl Chlorides 695, 1043 (5958)
- Alkenes 250 (5711)
- 2-Alkenyl Carboxylates 955 (5924)
- *N*-Alkyllactams 695
- 2-Alkylthio(Arylthio)-1-alkenyl Ketones 959 (5936)
- Alkynes 250 (5711)
- Aryloxyoxosulfonium Salts 858 (5916)
- *N*-(1-Arylthioalkyl)-nucleosides 1025
- 1,3-Benzodithiolium Salts 157 (5686)
- Bromoarenes 77 (5662)
- Carboxamides 695
- Carboxylic Acids 695
- Dibenzylidenebutanedials 898
- 3,6-Dihydropyrazines 473
- 4,5-Dihydrothieno[2,3-c]pyridines 469
- 3-(2,6-Dioxocyclohexyl)-propanals 998
- Ketoaldehydes 672 (5863)
- Ketones 672 (5863), 760 (5882)
- Nitrosamines 741
- Oximes 695
- *O*,*N*-Protected Amino Acids and Peptides 947
- Pyridinium Salts 79 (5667)
- Sulfonylhydrazones 65
- **with Dialkoxyalanes/Copper(I) Salts**
- 2-Alkenenitriles 1039 (5946)
- **with Dialkylalanes**
- 3-Acyl-2-oxotetrahydro-1,3-thiazoles 81 (5675)
- 2-Alkenals 640
- 2-Alkoxy-1-alkenyl Ketones 118
- Alkynes 422 (5795)
- 1-Alkynylsilanes 803
- Carboxylic Esters 1015
- Cycloalkene-1,2-dicarboxylic Esters 543
- Lactones 1015
- Z-Amino Acid Imidazolides 162 (5699)
- **with Dialkylboranes**
- 1-Halo-1-alkynes 259 (5738)
- **with Diazene**
- Endoperoxycycloalkenes 821
- **with *N*,*N*′-Diphenylhydrazine**
- Benzofuroxans 146
- **with Hydrogen Iodide**
- Enedicarbonyl Compounds 245
- **with Hydroxylamine**
- Benzofuroxanes 147
- **with Iodotrimethylsilane**
- 1-Hydroxyalkyl Ketones 333 (5742)
- **with Lithium/Alcohol/Ammonia or Amines**
- 2-Cycloalkenones 400
- **with Lithium/Ammonia or Amines**

- 5,6-Dihydro-2*H*-pyrans 492
- Phenols 763 (5889)
- Phthalic Esters 198
- **with Molybdenum(III) Reagents**
- Arylhydrazines and 3-Hydrazinopyridazines 830
- Heteroaromatic *N*-Oxides 129
- *N*-Heterocyclic C-Azido Compounds 830
- *C*-Nitro Compounds 129
- **with Potassium/Amines**
- *O*-Alkyl Thiocarbamates 1040 (5947)
- **with Raney Nickel/Protic Systems**
- β-Arylthio-carbonyl Compounds 336 (5752)
- **with Sodium/Ammonia or Amines**
- 1,3-Benzodithioles 157 (5686)
- **with Sodium Dithionite**
- Imines 417 (5778)
- **with Thiophenol**
- Arenediazonium Salts 855 (5907)
- **with Trialkylsilanes**
- 2-Alkylidene-1,3-dithianes 424 (5800)
- **with Trichlorosilane**
- Phosphine Oxides 504 (5821)
- Silyl Carboxylates 1039 (5944)
- **with Vanadium(II) Reagents**
- Oximes 220
- **with Zinc/Protic Systems**
- 4,5-Dihydro-1,2-oxazoles 252 (5717)
- 1-Hydrazonoalkanephosphonic Esters 1029
- 4-Sulfonyloxycoumarins 48
- 2,2,2-Trichloroethyl Carboxylates 731

● **Reduction-Alkylation**
- Carboxamides 421 (5790)

● **Reductive Coupling**
- ***C*–*C* Coupling**
- 2-Alkenals or 1-Alkenyl Ketones + Arenediazonium Salts + $TiCl_3$ 291
- Arenecarboxaldehydes + Dimethyl Sulfoxide + Sodium 255 (5727)
- Haloarenes + Tetrakis[triphenylphosphine]-nickel(0) 1047 (5971)

● **Reductive Cyclization (intermolecular)**
- **C–C–C**
- Activated Alkenes + *vic*-Dicarbonyl Compounds + Hexamethylphosphorous Triamide 642

● **Reductive Cyclization (intramolecular)**
- ***C*–*C* Ring Closure, General**
- 1,ω-Dibromo Compounds + $Ni(Cod)_2$ 759 (5879)
- of 2-Alkylthio-ω-(*o*-bromoaryl)-1-alkenes 419 (5785)
- **N–N–C–C–C**
- 2-(*o*-Nitrophenyl)-3,1-benzoxazines + Triethyl Phosphite 381
- **N–C–C–C–C**
- ω-Amino-*o*-nitrostyrenes + Iron/Acid 676 (5875)
- 3-Aryl-3-cyanopropanoic Esters, Catalytic Hydrogenation 663
- **N–C–C–C–C–C**
- 3-Aryl-3-cyanopropanoic Esters + Iron(II) Salts/Hydroxylamine 663

● **Retro Diels-Alder Reactions** 310

● **Ring-Contraction Reactions**
- Squaric Acid Esters, Irradiation 991

● **Ring-Enlargement Reactions**
- **C-Insertion to give O–C–C–C–C**
- 3-*t*-Butylpropanolides + $MgBr_2$ 766 (5899)
- **C-Insertion to give C_5**
- Cyclobutanones + Diazomethane 339 (5761)
- **C-Insertion to give C_6**
- Ring-fused Cyclopentadienones + Alkynes, Decarbonylation 205
- via Tiffeneau-Demjanov Rearrangement 862
- **C-Insertion to give S–C–C–S–C–C**
- 2-Alkylidene-1,3-dithians + Lead(IV) Acetate 588 (5847)

● **Semmler-Wolff Aromatization** 483, 887

● ***C*-Silylation**
- Allylic Replacement of Hydrogen 340 (5765)
- 2-Butynoic Acid 251 (5713)
- Replacement of Halogen 252 (5718), 704
- Replacement of Metals 859 (5918)

● ***N*-Silylation**
- *N*-Substituted Imines 630

● ***O*-Silylation**
- Alcohols and Phenols 257 (5731), 1047 (5972)
- Carboxylic Acids 626
- Cleavage of Lactones 586 (5839)
- Nitroalkanes 1047 (5972)
- Replacement of Alkyl Groups 546
- Replacement of Enolic Hydrogen 233, 310, 766 (5898), 1047 (5972)

● ***S*-Silylation**
- Replacement of Hydrogen 766 (5898)

● ***C*-Stannylation**
- Replacement of O-Functions 1011

● **Stereoisomerization**
- **Inversion of Configuration at Single Asymmetric Centers**
- Chemical Inversion of Secondary Alcohols 292
- ***cis/trans* Isomerization of Olefinic Compounds**
- Alkenes 1039 (5945)
- *(Z)*-1-Alkenylsilanes 803

● **Strecker Synthesis** 764 (5894)

● ***C*-(Sulfinylation)**
- Alkynes 1046 (5970)
- Replacement of Metal Substituents 475

● ***C*-(1-Sulfonylalkylation)**
- Replacement of N-Functions 138

● ***C*-Sulfonylation**
- Arenes 353

● ***O*-Sulfonylation**
- Aminophenols 577
- –OH in Sugar Derivatives 558, 559
- Replacement of Enolic Hydrogen 283
- Trimethylsilylmethanol 318

● **Sulfurization**
- Sulfinic Acids 615

● ***C*-Thiolation**
- Replacement of Halogen 907

● **Tiffeneau-Demjanov Rearrangement** 862

● **Transamination** 669 (5855)

● **Transesterification**
- **Carboxylic Esters**
- with Trialkylsilyl Triflates 546

● ***C*-Trifluoromethylation**
- Replacement of Halogen 583 (5831), 932

● **Tritium Labeling** 427

● **Vilsmeier Reaction** 326, 815

● **Wagner-Jauregg Reaction** 769

● **Wittig Reaction, Wittig-Horner Reaction**
see: Carbonyl Olefination

● **Wurtz Reaction** 704

INDEX OF SPECIAL REAGENTS

● **Acyloins**
- Use as Acyl-Anion Equivalents 36

● **Aliquat 336®**
- Use as Phase-Transfer Catalyst 573

● **9-Alkyl-9-borabicyclo[3.3.1]nonanes**
- Use as Alkylating Agents 946

● **Alkyl 2,4-Dinitrophenyl Disulfides**
- Preparation and Use as Alkylsulfenylating Agents 886

● **Aminomalodinitrile Tosylate**
- Preparation 801

● **(*S*)-1-Amino-2-methoxymethylpyrrolidine**
- Use as Chiral Reagent 160 (5693), 499 (5806)

● **1-Amino-2-oxo-4,6-diphenyl-1,2-dihydropyridine**
- Use as N-Synthon 844

● **2-Anilinomethylpyrrolidine**
- Use as Chiral Reagent 674 (5868)

● **Antimony(V) Chloride**
- Use as Catalyst 345 (review)

● **Antimony(V) Fluoride**
- Use as Catalyst 345 (review)

5-Azido-4-hydroxymethyl-1-methoxynaphthalene
- Use for COOH-Protection 13

● **Azidotrimethylsilane**
- Use *in situ* 865

● **Baker's Yeast**
- Use in Asymmetric Synthesis via Fermentation Processes 50

● **Barium Permanganate**
- Preparation and Use as Oxidizing Agent 489

● **Benzenesulfenyl Chloride**
- Use as Phenylsulfenylating Agent 503 (5817)

● **Benzyl-bis[triphenylphosphine]-palladium Chloride**
- Use as Catalyst 334 (5737)

3-Benzyl-5-(2-hydroxyethyl)-4-methyl-1,3-thiazolium Chloride

- Use as Catalyst 161 (5696), 338 (5759)
● **Benzyloxycarbonylglycine Ethyl Ester**
- Use as Glycine Synthon 768 (5904)
● **2-Benzylthio-5-oxo-4,5-dihydro-1,3-thiazole**
- Use for NH-Protection 81 (5673)
● **2,2′-Bipyridinium Chlorochromate**
- Preparation and Use as Oxidizing Agent 691
● **Bis[1,5-cyclooctadiene]-nickel(0)**
- Use as Dehalogenating Agent 759 (5879)
● ***S*-(Bis[phenylsulfonyl]-methyl) Benzenethiosulfonate**
- Use as Sulfenylating Agent 412
● **Bis[2-pyridyl] Disulfide**
- Use as Dehydrogenating Agent 587 (5842)
● **Bis[trifluoroacetoxy]-phenyliodine**
- Use 249 (5709), 486
● **Bis[trifluoromethyl]-mercury**
- Use as Trifluoromethylating Agent 932
● ***N,N*-Bis[trimethylsilyl]-glycine Trimethylsilyl Ester**
- Use as Glycine Synthon 768 (5904)
● **Bis[triphenylphosphine]-nickel Dichloride**
- Use as Catalyst in Grignard Reactions 77 (5663)
● **Blue Tetrazolium: 4,4′-(5,5′-Dimethoxybiphenyl-2,2′-diyl)-bis[1,5-diphenyltetrazolium] Dichloride**
- Use as Oxidizing Agent 739
● **9-Borabicyclo[3.3.1]non-9-yl Triflate**
- Use as Borylating Agent 333 (5744)
● **Borane-1,4-Oxathian**
- Preparation and Use as Hydroborating Agent 153
● **Borane-Pyridine**
- Use as Reducing Agent 855 (5905), 891
● **Boron Tribromide**
- Use for Ether Cleavage 159 (5692)
● **1-Bromo-1-dimethylamino-2-methylpropane**
- Preparation and Use for OH/Br Exchange 1045 (5963)
● **6-Bromo-1,3-dimethylpyridazinium Bromide**
- Preparation and Use as Brominating Agent 746
● **Bromodimethylsulfonium Bromide**
- Use as Brominating Agent 581 (5823), 583 (5828)
● **3-Bromo-2-oxopropylidenetriphenylphosphorane**
- Use as Anellation Reagent 957 (5930)
● ***N*-Bromosuccinimide**
- Use as Brominating Agent 322, 581 (5824), 882
- Use in *cis/trans* Isomerization 803
● **Bromotrimethylsilane**
- Use as Silylating Agent 586 (5839)
● ***t*-Butylchlorodimethylsilane**
- Use as Silylating Agent 234, 257 (5731), 1047 (5972)
● **Butyldimethylsulfonium Fluoride**
- Preparation and Use as Methylating Agent 852
● ***t*-Butyl Hypochlorite**
- Use as Oxidizing Agent 322, 371
● ***S*-*t*-Butyl Thionitrate**
- Use as Deaminating Agent 582 (5826), 586 (5840), 669 (5856)

● **Carbon Monoxide**
- Use as CO Synthon 339 (5762), 341 (5766), 344 (5775), 350, 587 (5843), 882
● **1,1′-Carbonyl-bis[4-benzylidene-1,4-dihydropyridine]**
- Preparation and Use as Carbonyl Synthon 485
● ***N,N′*-Carbonyldiimidazole**
- Use for preparing Reactive *N*-Acylimidazoles 159 (5691), 162 (5699)
● **3,4-Carbonyldioxy-2,5-diphenylthiophene 1,1-Dioxide**
- Use as Carbonic Acid Synthon 254 (5724), 255 (5725)
● **Chiral Reagents**
- Additives in Asymmetric Synthesis 422 (5793)
- Additives in Reductions 760 (5882)
- Amino Acids (and Esters) for Formation of Chiral Intermediates 417 (5780), 856 (5910), 857 (5912)
- cyclo(Gly-L-Ala) in Chiral Amino Acid Synthesis 768 (5903)
- 1,2-Diamines as Ligands in Complex Aluminum Hydrides 249 (5708)
- 1,2-Diamines for Chiral Aminal Formation 674 (5868)
- Hydrazine Derivatives for Chiral Hydrazone Formation 160 (5693), 499 (5806)
- Ligands in Catalytic Hydrogenation 504 (5821)
- Chiral 1,3-Oxazole Derivatives as Reaction Components 586 (5838)
● **Chloramine-T Trihydrate**
- Use 958 (5932)
● **3-Chlorobenzoperoxoic Acid**
- Use as Oxidizing Agent 1011
● **Chloro-bis[η^5-cyclopentadienyl]hydridozirconium**
- Use as Hydrozirconation Reagent 1040 (5949)
● **1-Chloro-1-dimethylamino-2-methylpropene**
- Preparation and Use for OH/Cl Exchange 1045 (5963)
● **6-Chloro-1,3-dimethyl-4,5-dihydropyridazinium Phosphorodichloridate**
- Preparation and Use as Chlorinating Agent 746
● **6-Chloro-1,3-dimethylpyridazinium Chloride**
- Preparation and Use as Chlorinating Agent 746
● **6-Chloro-1,3-dimethylpyridazinium Phosphorodichloridate**
- Preparation and Use as Chlorinating Agent 746
● **Chlorodimethylsulfonium Chloride**
- Use as Chlorinating Agent 581 (5823)
● **2-Chloro-3-ethyl-1,3-benzoxazolium Tetrafluoroborate**
- Use as Dehydrating Agent 417 (5779)
● **2-Chlorophenyl *N*-Phenylphosphoramidochloridate**
- Use as Phosphorylating Agent 398
● **3,3′-Chlorophosphinylidene-bis[2-oxo-1,3-oxazolidine]**
- Preparation and Use 547, 1091
● **Chlorosulfonyl Isocyanate**
- Use as Dehydrogenating Agent in Combination with Dimethyl Sulfoxide 141
● **2-Chlorotetrahydrofuran**
- Preparation and Use 343 (5774)
● **Chlorotrimethylsilane**
- Use as Condensing Agent 670 (5858)
- Use as Silylating Agent 626, 704, 1047 (5972)
● **Crown Ethers**
- Use as Phase-Transfer Agents 368, 573, 632, 799, 860 (5921), 1007
● **12-Cyano-9,10-dimethyl-9,10-dihydro-9,10-epoxyiminoanthracene**
- Preparation and Use as Source of Nitrosyl Cyanide 177
● **2-Cyanoethyl Phosphorodichloridate**
- Preparation 831
● **2-Cyanoethyl 2,2,2-Trichloroethyl Phosphorochloridate**
- Preparation and Use as Phosphorylating Agents 831
● **Cyanotrimethylsilane**
- Preparation 460
- Use 861 (review)
● **cyclo(Gly-L-Ala)**
- Use in Chiral Amino Acid Synthesis 768 (5903)

● **2,4-Diamino-1,3-thiazole Hydrotribromide**
- Preparation and Use as Brominating Agent 487
● **Di-*t*-butyl Peroxide**
- Use as Oxidizing Agent 80 (5670)
● **Dichloro-bis[η^5-cyclopentadienyl]-zirconium**
- Use as Catalyst 1034
● **Dichloromethylenetris[dimethylamino]-phosphorane**
- *in situ* Use in Carbonyl Olefination 554
● **Dicyclohexylcarbodiimide**
- Use in Esterification 674 (5870)
- Use in Lactam Formation 453
● **Dicyclopentylboryl Triflate**
- Use as Borylating Agent 333 (5744)
● **Diethylaluminum 2,2,6,6-Tetramethylpiperidide**
- Use 158 (5688), 422 (5794)
● **Diethylaminotrimethylsilane**
- Use as Silylating Agent 310
● **Diethyl 2,2-Dichloro-1-ethoxyvinyl Phosphate**
- Preparation and Use 424 (5798)
● **Diethyl Phosphorocyanidate**
- Use as Condensing Agent 256 (5729)
- Use as Cyanating Agent 764 (5894)
● **Dihydridotetrakis[triphenylphosphine]-ruthenium**
- Use as Catalyst for Double-Bond Shifts 257 (5732)
● **1,2;5,6-Di-*O*-isopropylidene-α-D-glucofuranose**
- Use as Chiral Additive in Reduction Reactions 760 (5882)
● **3,5-Dimethoxybenzyl 4-Nitrophenyl Carbonate**
- Preparation and Use 7
● **2,5-Dimethoxytetrahydrofuran**
- Use as Source of Butanedial 689, 898
● **Dimethylaluminum Amide**
- Preparation and Use as N-Synthon 1046 (5967)
● **4-Dimethylaminopyridine**
- Use as *O*-Acylation Catalyst 83 (5679)
- Use as Esterification Catalyst 254 (5724)
- Use as Etherification Catalyst 79 (5668), 257 (5731)
● **2-(2,6-Dimethylanilinomethyl)-pyrrolidine**
- Use for Formation of Chiral Complex Aluminum Hydrides 249 (5708)
● ***S,S*-Dimethyl Dithiocarbonate**
- Use as Methylthiocarbonylating Agent 959 (5939)
● **Dimethylformamide**
- Use as Aminating Agent 40
- Use as Aminomethylenating Agent 729
● **Dimethylformamide Dimethyl Acetal**
- Use as Aminomethylenating Agent 236, 471, 479
● **3,4-Dimethyl-5-(2-hydroxyethyl)-1,3-thiazolium Iodide**
- Use as Catalyst 338 (5759)
● ***N,N*-Dimethyl-2-hydroxypropanamine Imide**
- Generation and Use as NH Synthon 650
● **1-(2,6-Dimethyl-4-oxo-1,4-dihydro-1-pyridyl)-pyridinium Salts**
- Use as Pyridine Synthon 767 (5901)
● **Dimethyl-(phenylthio)-aluminum**
- Use as Phenylsulfenylating Agent 1042 (5953)
● **Dimethyl Sulfoxide**
- Use as CH_2 Synthon 670 (5858)
● **Dimethyl *N*-Tosylsulfoximine, Sodium Salt**
- Use as C-Synthon 503 (5818)

● 3,5-Dioxo-4-phenyl-3,5-dihydro-4*H*-1,2,4-triazole
- Use as Dienophile in Diels-Alder Reactions 173, 186, 209, 238, 772, 775, 791
● Diphenyl Diselenide
- Use as Phenylselenylating Agent 1047 (5973)
● Diphenylphosphinic Chloride
- Use for Carboxy-Group Activation 385
● Diphenyl Selenoxide
- Use as Oxidizing Agent 497 (5801)
● Diphenylsulfilimine
- Use as N-Synthon 1006
● Disiamylborane
- Use as Hydroborating Agent 152
- Use as Reducing Agent 259 (5738)
● *N,N'*-Disuccinimidyl Carbonate
- Preparation and Use as Carboxy-Activating Agent 858 (5915)

● Ethyl 3-Bromo-2-oximinopropanoate
- Use as Alanine Synthon 860 (5922)
● Ethyl Tosylate
- Use as Esterification Reagent 676 (5877)
● Ethyl 3-Trimethylsiloxypropenoate
- Preparation and Use as Formylacetic Ester Equivalent 231

● 1-Fluoro-1-dimethylamino-2-methylpropane
- Preparation and Use for OH/F Exchange 1045 (5963)

● Hexafluoroacetone
- Use in Comination with Hydrogen Peroxide in Epoxidation Reactions 810
● Hexamethyldisilazane
- Use as Silylating Agent 233
● Hexamethylphosphoric Triamide (HMPT)
- Lithiation 575
● Hexamethylphosphorous Triamide (Tris[dimethylamino]-phosphine)
- Use as Deoxygenating Agent 642
● 1-Hydroxy-2-oxo-4,6-diphenyl-1,2-dihydropyridine
- Use 763 (5890)
● 2-Hydroxy-1-(3,6,9-trioxadecyl)-benzimidazole
- Use for OH-Group Activation 859 (5919)

● 1-Iodo-1-dimethylamino-2-methylpropene
- Preparation and Use for OH/J Exchange 1045 (5963)
● Iodotrimethylsilane
- Use as Iodinating Agent 823
- Use as Reducing Agent 333 (5742)
- Use as Silylating Agent 84 (5682), 586 (5839)
- Use in Ester Cleavage 863
● Isatoic Anhydrides
- Use as Starting Material in Organic Synthesis 54, 63, 505 (review)

● *(S)*-*t*-Leucine *t*-Butyl Ester
- Use as Chiral Amine 856 (5910)
● Lewatit SP 120
- Use as Catalyst 871

● Magnesium Methoxide
- Use 159 (5691)
● *O*-Mesitylenesulfonylhydroxylamine
- Use as Aminating Agent 801
● 4-Methoxymethyl-2-methyl-5-phenyl-4,5-dihydro-1,3-oxazole
- Use as Chiral Reaction Component 586 (5838)
● Methoxymethyltrimethylsilane
- Use as Source of Methoxymethyl Anion 766 (5897)
● Methyl Fluorosulfate
- Use as Methylating Agent 843

● Methylformamide
- Use as Aminating Agent 40
● Methyl Methylthiomethyl Sulfoxide
- Use as C-Synthon 424 (5799)
● *N*-Methylmorpholine *N*-Oxide
- Use as Oxidizing Agent 622
● 3-Methyl-2-selenoxo-2,3-dihydro-1,3-benzothiazole
- Use as Deoxygenating Agent 636, 1091
● Methylthiotrimethylsilane
- Preparation and Use as Thioacetalization Reagent 866

● 1-Nitroso-1-oxoethane
- Generation *in situ* and Use as Hydroxamic Acid Synthon 761 (5884)
● Nitrosyl Cyanide
- Addition Compound with 9,10-Dimethylanthracene
see: 12-Cyano-9,10-dimethyl-9,10-dihydro-9,12-epoxyiminoanthracene
● Norphos
- Preparation and Use as Chiral Ligand 504 (5821)

● Octacarbonyldicobalt
- Use as Carbonylation Catalyst 339 (5762)
● 1,7-Octadien-3-one
- Preparation and Use as Anellation Reagent 582 (5825)

● Pentacarbonyliron
- Use as Carbonyl Synthon 161 (5697)
● Pentakis[dimethylamino]-niobium
- Use as Catalyst 305
● Pentakis[dimethylamino]-tantalum
- Use as Catalyst 305
● P^1-*S*-Phenyl P^2-Adenosine 5′-Pyrophosphorothioate
- Preparation and Use as Capping Agent in Nucleic Acid Chemistry 556
● Phenyl Cyanate
- Preparation and Use as Cyanating Agent 150
● P^1-*S*-Phenyl P^2-7-Methylguanosine-5′ Pyrophosphorothioate
- Preparation and Use as Capping Agent in Nucleic Acid Chemistry 556
● Phenyl Phosphorodichloridate
- Use as Condensing Agent 939
● Phenylthiomagnesium Iodide
- Use as Phenylsulfenylating Agent 420 (5789)
● Phenyltriethylammonium Tribromide
- Use as Brominating Agent 148
● Phenyl Vinyl Sulfoxide
- Use as Dienophile 176, 184, 190, 203
● Phthalocyaninecobalt
- Use as Redox Catalyst 947
● Polymer-Linked Reagents
- Aminomethylpolystyrene
- Preparation and Use 21
- Chloromethylpolystyrene
- Use in Peptide Synthesis 20
- Polymer-Linked Ammonium Perhalides
- Use as Halogenating Agents 143
● Polymer-Supported Cyanide and Thiocyanate
- Preparation and Use 299
● Polyphosphoric Acid (PPA)
- Use as Condensing Agent 132, 136, 222, 395, 716
● (*S*)-Proline
- Use as Chiral Reagent 857 (5912)
● Pyridinium Chlorochromate
- Use as Oxidizing Agent 126, 152
● Pyridinium Dichromate
- Use as Oxidizing Agent 157 (5685)
● Pyridinium Poly[hydrogen fluoride]
- Use as Fluorinating Agent 667 (5850), 670 (5857), 759 (5878)

● Sodium Superoxide
- Use 958 (5934)
● Solvent Red 19 and 23
- Use as End-point Indicators of Ozonization 809
● Sulfuryl Chloride Fluoride
- Use as Dehydrating Agent 659, 661
● Supported Reagents
- Iron(III) Nitrate on Clay
- Preparation and Use 849
- Sodium Hydroxide on Alumina
- Preparation and Use 113
- Sodium Sulfide on Alumina
- Preparation and Use 113

● Tetrabutylammonium Periodate
- Preparation and Use as Oxidizing Agent 563
● Tetraethylammonium Hydrogen Dibromide
- Use as Hydrobrominating Agent 805
● Tetraethylammonium Hydrogen Sulfide
- Preparation and Use as Thiolating Agent 907
● Tetrakis[triphenylphosphine]-nickel(0)
- Preparation and Use 1047 (5971)
● Tetrakis[triphenylphosphine]palladium
- Use as Catalyst 333 (5743), 955 (5923) (5924)
● Tetraphenylcyclopentadienone (Tetracyclone)
- Use as Diene Component in Diels-Alder Reactions 168, 184, 185
● 2,2,2-Trichloroethyl Phosphorodichloridate
- Preparation 831
● *N*-Trichloromethylcarbonimidic Dichloride
- Use 93
● Trichloro-1,3,5-triazine
- Use as Dehydrating Agent 657
- Use as Chlorinating Agent 221, 1044 (5962)
● 1,3,5-Trichloro-2,4,6-trioxohexahydro-1,3,5-triazine
- Use in *S,S*-Acetal Cleavage 659
● Triethylboroxine
- Use as Borylating Agent 935, 936
● Triflic Anhydride (Trifluoromethanesulfonic Anhydride)
- Use as Sulfonylating Agent 45, 283, 318
● Trifluoroacetyl Triflate
- Use as Trifluoroacetylating Agent 250 (5710)
● Trifluoro-1,3,5-triazine
- Use for Deoxygenation of Sulfoxides 221
● 5-(2,4,6-Triisopropylphenylsulfonyl)-tetrazole
- Use as Condensing Agent 398
● Trimethyl 3-Phenylselenoorthopropanoate
- Preparation and Use as Acrylic Acid Synthon 501 (5812)
● Trimethylsilylacetonitrile
- Preparation 252 (5718)
- Use as CH−CN Synthon 252 (5718), 259 (5737), 1045 (5965)
● Trimethylsilylacetylene
- Use as Ethynylation Reagent 628
● Trimethylsilyl Azide
see: Azidotrimethylsilane
● Trimethylsilyl Cyanide
see: Cyanotrimethylsilane
● Trimethylsilyl Isocyanate
- Preparation 460
● Trimethylsilyl Isothiocyanate
- Preparation 460
● Trimethylsilyl Triflate
- Use as Catalyst 956 (5928)
- Use as Silylating Agent 546, 630
● Trimethylsulfonium Fluoride
- Preparation and Use as Methylating Agent 852
● Triphenylbismuth Carbonate

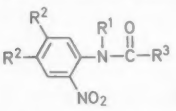
- Preparation and Use as Oxidizing Agent 581 (5822)
● 2,4,6-Triphenylpyrylium Tetrafluoroborate
- Use 763 (5890)
● Triphenylsilyl Hydroperoxide
- Use as Epoxidation Reagent 675 (5873)
● 1,4,5-Triphenyltetrazolium Chloride
- Use as Oxidizing Agent 739
● Tris[methylseleno]-borane
- Preparation and Use 1044 (5961)
● Tris[phenylseleno]-borane
- Preparation and Use 1044 (5961)
● Tris[triphenylphosphine]-rhodium
- Use as Catalyst 339 (5760)
● Tris[triphenylthio]-aluminum
- Use as Phenylsulfenylating Agent 503 (5816)

INDEX OF APPARATUS, LABORATORY TECHNIQUES, ETC.

● Apparatus for Cyclobutanone Preparation 326
● Electrochemical Methods
- anodic *C*-alkoxylation of lactams 315
● Fermentation Processes
- cinnamaldehyde + baker's yeast 50
● Photochemical Methods
- removal of protective groups 1 (review)
● Phase-Transfer Catalysis
- Liquid/Liquid (Aqueous/Organic)
- *O*-acylation of alcohols with acyl halides in the presence of base and quaternary aminium salts 402
- alkylation of nucleophiles with alkyldiarylsulfonium salts 926
- *N*-alkylation with alkyl halides in the presence of base and a quaternary aminium salt 717
- cyclopropanation of olefinic compounds with *C*-halo compounds in the presence of quaternary ammonium salts 34
- diazo-group transfer in the presence of base, tertiary aminium salts, and crown ethers 368
- esterification of potassium *O*-alkyl dithiocarbonates with alkyl halides in the presence of quaternary aminium salts 375
- imidoyl chlorides + phenols, carboxylic acids, or arenethiols in the presence of base and quaternary ammonium salts 114
- oxidation of hydroquinones and catechols with hypochlorite in the presence of quaternary aminium salts 706
- oxidative hydration of nitriles in the presence of quaternary ammonium salts 243
- phenols + chloropyridines in the presence of base and quaternary aminium salts 921
- phosphorodiamidic chlorides + alcohols + base in the presence of quaternary aminium salts 290
- *O*-sulfonylation of aminophenols in the presence of quaternary aminium salts 578
- Solid/Liquid
- alkylation of nucleophiles with alkyldiarylsulfonium salts in the presence of solid base 926
- *O*-alkylation of sugars with alkyl halides in the presence of solid base and tertiary aminium salts 954
- *C*-alkylation with alkyl halides in the presence of solid base and quaternary aminium salts 811
- *N*-alkylation with alkyl halides in the presence of solid base and quaternary aminium salts 717
- alkylidenation of cyclopentadiene with ketones in the presence of solid potassium hydroxide 799
- Cl/Alkoxy exchange in the presence of solid potassium hydroxide and crown ethers 574
- OH/CN exchange in alcohols with potassium cyanide in the presence of tertiary phosphines and crown ethers 1007
- esterification of solid potassium phosphinates with alkyl halides in the presence of crown ethers 632

Errata and Addenda 1980

V. N. R. Pillai, *Synthesis* **1980** (1), 1–26;
The structure of compound **86** (p. 12) should be:

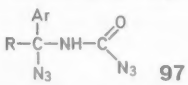


86

V. I. Cohen, *Synthesis* **1980** (1), 60–63;
The alternative name (in brackets) for compounds **1** (p. 62, first experimental procedure) should be ***S*-Methylpseudothiourea Hydroiodides.**

J. R. Mahajan, H. C. de Araújo, *Synthesis* **1980** (1), 64–66;
The authors have erroneously stated that "exaltolide" is a trivial name for pentadecanolide. In fact "exaltolide" is a trademark registered in the name of Firmenich SA, Geneva and should be designated as Exaltolide®.

V. I. Gorbatenko, L. I. Samarai, *Synthesis* **1980** (2), 85–110;
The structure of compound **97** (p. 99) should be:



97

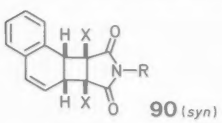
M. Mikołajczyk, P. Bałczewski, S. Grzejszczak, *Synthesis* **1980** (2), 127–129;
The correct name for compound **5a** (first procedure, p. 129) is **Diethyl 1-Phenylthioethanephosphonate.**

G. A. Olah, Y. D. Vankar, M. Arvanaghi, *Synthesis* **1980** (2), 141–142;
The correct name for compound **4** is ***N*-(Chlorosulfonyl)-dimethylsulfilimine.**

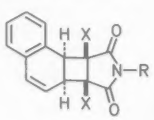
Abstract 5692, *Synthesis* **1980** (2), 159;
The title should be: **Phenols from Aryl Ethyl Ethers.**

Abstract 5698, *Synthesis* **1980** (2) 161;
The title should be: **Enals and Enones from Ketones.**

T. Wagner-Jauregg, *Synthesis* **1980** (3), 165–214;
The structures of compounds **90** (p. 175) should be:



90 (*syn*)



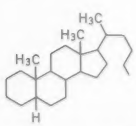
90 (*anti*)

The correct name for compound **251** (p. 188) is **2*H*-Cyclohepta[*gh*]pyrrolizin-Derivat.**

Abstract 5724, *Synthesis* **1980** (3), 254;
The title should be: **Carbamates, Thiocarbamates, and Carbonates from Alcohols or Thiols.**
The first line under the formula scheme should be: Y = O, S.

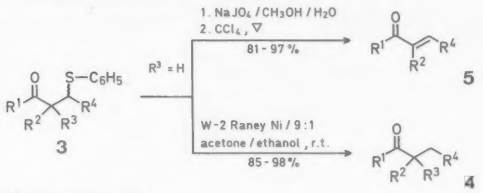
Abstract 5728, *Synthesis* **1980** (3), 256;
The title (and name for compound **3**) should be: ***N*-Sulphenylimines Derived from Amino Acids.**

C. R. Harrison, P. Hodge, *Synthesis* **1980** (4), 299–301;
The 3rd group in the Table, part B (p. 300) should have the structure:



Abstract 5745, *Synthesis* **1980** (4), 334;
The title should be: **Stereocontrolled *cis*-Addition of Organocopper Reagents to 2-Alkynals, 1-Alkynyl Ketones, 2-Alkynoic Acids, and 2-Alkynoic Esters.**

Abstract 5752, *Synthesis* **1980** (4), 336;
The title should be: **α-Alkylation and α-Alkylidenation of Carbonyl Compounds.**
The formula scheme for the conversion **3**→**4** or **5** should be:

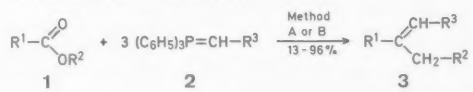


R^4 = CH_3, i-C_3H_7, t-C_4H_9.

Abstract 5770, *Synthesis* **1980** (4), 342;
The title should be: **Claisen Rearrangement of Ketene Allyl Ethyl Acetals.**

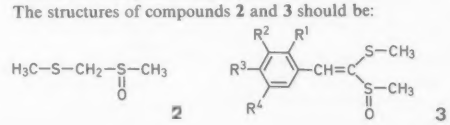
M. A. Alkhader, R. K. Smalley, B. Mohajerani, *Synthesis* **1980** (5), 381–383;
The correct name for compound **6** is **Indazolo[3,2-*b*]naphtho[2,3-*d*]-[1,3] oxazin-6-one.**

Abstract 5782, *Synthesis* **1980** (5), 418;
The formula scheme should be:



1 **2** **3**

Abstract 5799, *Synthesis* **1980** (5), 424;
The structures of compounds **2** and **3** should be:

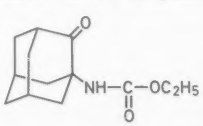


2 **3**

L. M. Harwood, M. Julia, *Synthesis* **1980** (6), 456–457;
The structure of compound (−)-**7** should be:

(−)-**7**

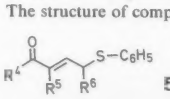
T. Sasaki, S. Eguchi, T. Okano, *Synthesis* **1980** (6), 472–475;
The structure of compound **5** should be:



5

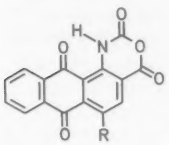
Abstract 5804, *Synthesis* **1980** (6), 498;
The title should be: **Allylic Funtionalisation of Exomethylene Compounds.**

Abstract 5817, *Synthesis* **1980** (6), 503;
The structure of compound **5** should be:

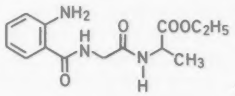


5

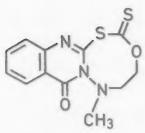
G. M. Coppola, *Synthesis* **1980** (7), 505–536;
The structures of compounds **43** (p. 511), **122** (p. 520), and **241** (p. 533) should be as shown below:



43



122

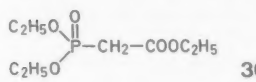


241

J. Diago-Meseguer, A. L. Palomo-Coll, J. R. Fernández-Lizarbe, A. Zugaza-Bilbao, *Synthesis* **1980** (7), 547–551;
The substitutent R^1 in Table 1 entries 2 and 20 and Table 2, entry 1 should be:

A more correct name for reagent **4** (as used in index) is **3,3′-(Chlorophosphinylidene)-bis[2-oxo-1,3-oxazolidine].**

J. Becher, *Synthesis* **1980** (8), 589–612;
The structure of compound **36** (p. 593) should be:



36

H. Paulsen, F. R. Heiker, J. Feldmann, K. Heyns, *Synthesis* **1980** (8), 636–638;
The correct name for reagent **1** is **3-methyl-2-selenoxo-2,3-dihydro-1,3-benzothiazole.**

G. Sosnovsky, J. A. Krogh, *Synthesis* **1980** (8), 654–656;
The first line of the text should read:
In 1978, Olah and Vankar reported[1] the conversion of

D. A. Walsh, *Synthesis* 1980 (9), 677–688;
The correct name for compound **39** (p. 680) is ***N′*-(2-Carboxyphenyl)-*N,N*-dimethylformamidine.**

M. A. Smoczkiewicz, J. Jasiczak, *Synthesis* **1980** (9), 739–740;
Compounds **2** should be named as **20,21-dioxo derivatives**; the name for compound **1a** (p. 740, Table 1) should be **21-hydroxy-3,20-dioxopregn-4-ene.**

Abstract 5878, *Synthesis* **1980** (9), 759;
The title should be: **Hydrofluorination, Halofluorination, and Nitrofluorination of Alkenes and Alkynes by Pyridinium Poly(Hydrogen Fluoride).**

Abstract 5885, *Synthesis* **1980** (9), 761;
The title should be: **Alkylation of *S*-Methyl 3-Oxoalkanethioates.**

T. Wagner-Jauregg, *Synthesis* **1980** (10), 769–798;
The name of compounds **552a** and **b** (p. 772) should be ***cis*- and *trans*-1-methyl-3-phenylindan.**
The heading for Table 2 (p. 784) should be:
Tabelle 2. Herstellung von 1-Arylacenaphthen-Derivaten durch Photocyclisierung von 1-(1-Arylethenyl)-naphthalin-Derivaten in Abwesenheit von Oxidationsmitteln[441].
The structures of the products in this Table should be of the type:

and not

The first paragraph on p. 785 (right-hand side) should read:
Aus den konjugierten 1,2-Diiminen **667** und Phenyl-isocyanaten oder Benzoyl-isocyanat entstehen criss-cross-Addukte (**668**, Schema **2.2.1.-E**)[480,481].

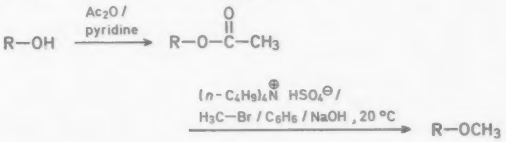
The last line on p. 794 should read:
und der Hydroxamsäuren[552] deutlich gesteigert[553].

Reference 441 (p. 796) should be:
[441] R. Lapougade, R. Koussini, H. Bouas-Laurent, *J. Am. Chem. Soc.* **99**, 7374 (1977).

H. Alper, D. E. Laycock, *Synthesis* **1980** (10), 799;
The last structure for R^1-R^2 in the Table should be:

T. Takajo, S. Kambe, *Synthesis* **1980** (10), 833–836;
Products designated as **4a, b, c, d** in Table 1 (p. 834) and Table 2 (p. 835) should be designated as **4a, b, f, g**, respectively.

P. Di Cesare, P. Duchaussoy, B. Gross, *Synthesis* **1980** (11), 953–954;
The first formula scheme (p. 954) should be:



Z. H. Kudzin, W. J. Stec, *Synthesis* **1980** (12), 1032–1034;
The heading for the first procedure (p. 1033) should be: **3-(Tris-[*t*-butoxy]silylthio)-propanal [3; R = (*t*-$C_4H_9O)_3Si$].**

R. E. Zipkin, N. R. Natale, I. M. Taffer, R. O. Hutchins, *Synthesis* **1980** (12), 1035–1036;
The substituents R^1-R^2 in the Table for product **4e** should be:
$-(CH_2)_2-C[=C(CH_3)_2]-CH_2-$

Abstract 5948, *Synthesis* **1980** (12), 1040;
Compounds **2** should be named **carboximidium dichlorides.**

Abstract 5963, *Synthesis* **1980** (12), 1045;
The title should be: **Acyl Fluorides, Chlorides, Bromides, and Iodides from Carboxylic Acids.**

Abstract 5973, *Synthesis* **1980** (12), 1047;
The title should be: **Acetoxylation-Arylselenylation of Alkenes.**

SYNTHESIS International Journal of Methods in Synthetic Organic Chemistry 1980

Authors' Guidelines

I. Review Articles

Potential authors are asked to contact Prof. G. Schill or Prof. G. Sosnovsky before submitting a manuscript in order to avoid duplication of topics or exceptionally long delays in publication. For addresses see inside front cover of a current issue of SYNTHESIS.

Language of publication is English or, in exceptional cases after consultation with the Editors, German.

The subject matter which might be acceptable is almost unlimited provided that the emphasis is on practical methods in synthetic organic chemistry. The article should give either a complete description of the methods which have not been previously reviewed and/or a critical evaluation of new developments to known methods. The manuscript should be written in the style currently used in SYNTHESIS and should include as many up-to-date, key references as possible.

In addition to the directions given in Section III, the following points should be followed during the preparation of manuscripts for review articles:

1. The manuscript should not exceed 40 pages (DIN A4 or Quarto), including references, formulae, and tables, typed with double spacing (~15–20 printed pages). Longer articles may be accepted under exceptional circumstances; however, publication of such articles may be delayed until sufficient space becomes available.
2. The methods described must be illustrated by detailed descriptions of the experimental procedures involved. These examples should preferably be unpublished or be selected from less common sources.
3. Discussion of theory and mechanism should be limited to the minimum necessary for a clear understanding of the reactions under consideration. Historical background should be avoided or restricted to a minimum.
4. Clear reaction schemes (not only individual structures) should be given and tabulation of critically selected analogous results made whenever possible.
5. Each review article must be preceded by a table of contents and a concise abstract reflecting accurately the subject matter.
6. Only in exceptional cases should the author restrict the presentation to his own work.
7. Quotation of authors' names in the text should be avoided.
8. The material contained in previous review articles should be considered and repetitions avoided wherever possible.

No fees are paid to the authors of Reviews nor are page charges levied.

II. Communications

Language of publication is English or German; manuscripts should not exceed 6–8 pages in length; no page charges are levied.

Subject of Manuscripts

Manuscripts dealing with the following topics may be submitted for publication.

1. *New synthetic methods*
   Advantages of the new method over the presently existing methods for the same process should be indicated and the scope and limitations of the new method should be indicated by several examples.
2. *Significantly improved synthetic methods*
   Advantages of the new development over currently used methods should be clearly demonstrated by parallel experiments under similar conditions.
3. *New and/or significantly improved preparations of key substances*
   Potential applications of the key substances should be demonstrated clearly by literature citations or by practical examples.
4. *New classes of compounds.*

Manuscripts describing syntheses of *new* compounds by *known* methods will not be accepted. In addition, manuscripts may not be accepted if the reactions are only performed on an analytical scale and products are not isolated by a preparative means.

Manuscripts, the essential features of which have previously been published in preliminary form, will not be accepted.

The Editors reserve the right to reject manuscripts which they consider deal with topics of too specialised interest and which would be more suitably published in an appropriate specialist journal.

Content of Manuscripts

Manuscripts must contain:

1. Notation of scope and limitations of the method reported.
2. Clear formula schemes.
3. Detailed experimental procedures.
4. Full preparative, yield, and analytical data.
5. Demonstration of purity and identity of *all products* by suitable analytical methods (with notation of apparatus and conditions).
6. Microanalytical data for *all new compounds.* These data should be submitted separately but will not always be printed.

III. Preparation of Manuscripts for Reviews and Communications

1. The manuscript should be typed double spaced on DIN A4 or Quarto paper; indentations and underlinings should be avoided (except for complicated cases, as in sugar chemistry, where the type of script to be used may be indicated by underlining). In the case of manuscripts with more than one author, the author to whom correspondence is to be addressed should be indicated (*).
2. The style of articles currently published in SYNTHESIS should be followed; tables, procedures, spectral data, formula schemes, references, etc. When the preparation of a series of similar (e.g. homologous) compounds is described, a general procedure should be given and the data for the individual compounds presented in tabular form.
3. The nomenclature used should be based on the systematic rules adopted by *Chemical Abstracts* (Index Guide Vol. 76), *Ring Index* and *Supplements* (American Chemical Society, 1959–1965), IUPAC (*Nomenclature of Organic Chemistry,* Parts A, B & C, Pergamon Press, 1979) etc. Trivial names should be avoided unless they are definitely advantageous over the corresponding systematic names.
4. Whenever possible, clear formulae (reaction schemes are to be preferred to individual structures) should be given for the reaction described. Freehand drawings of organic structures are acceptable. However, it is emphasised that the presentation should be clearly and neatly carried out.

   The following abbreviations should be used in formula schemes:

A	Groups such as $—(CH_2)_n—$, $—C_6H_4—$, and hetero analogs
M	Metal
R	(preferentially) C-Substituents
X	Halogen, OR, NR_2, SR, etc. (monovalent)
Y	O, S, NH, etc. (bivalent)

   and the abbreviations used in peptide and sugar chemistry.

   Note: for iodine, the sign J is used, not I.
5. In the text, full chemical names should be used instead of formulae whenever possible (e.g. hydrogen chloride or hydrochloric acid, respectively, not HCl). In certain cases, however (e.g. complexes having complicated names) formulae will be accepted.
6. References should be placed collectively at the end of the review article or communication. They should be numbered consecutively. Subdivisions such as 3a, 3b should be avoided. It is requested that the references be checked carefully before the manuscript is submitted. In quotations with more than four authors, only the name of the first author is given with the addition "et al.". Journal abbreviations should be in accord with *Chemical Abstracts* practice (see *Bibliographic Guide for Editors and Authors,* American Chemical Society, 1974).
7. The use of footnotes referring to the text should be avoided if possible. Footnotes should be numbered consecutively with the references throughout the manuscript. Footnotes may be used for tables and should be designated as a, b, c, etc.
8. Acknowledgements may only be made for financial support, essential gifts of chemicals or apparatus, and performance of essential parts of the work (microanalyses, spectra, etc.) by other firms, institutions, etc. The acknowledgements should be kept as brief as possible and placed at the end of the manuscript. Similarly, dedications should be brief and placed at the end of the manuscript.
9. The internationally accepted system of units – "SI-units" – should be used wherever possible.

IV. Submission of Manuscripts

Manuscripts (3 copies are necessary) should be submitted to the editorial office, Prof. Schill, or Prof. Sosnovsky. For addresses see inside front cover of a current issue of SYNTHESIS.

Upon receipt of the manuscript by the editorial office or the Editor, an acknowledgement postcard will be sent. The results of the referees' evaluation will usually follow within 6–8 weeks.

Communications which are accepted for publication will be published as rapidly as is technically possible. It is therefore of interest to readers and authors that all manuscripts be concise and in accord with the directions given here.

Manuscripts written in a language which is not the author's mother language will be checked carefully and corrected where necessary by the editorial staff; this may lead to some delay in publication.

V. Galley Proofs

Galley proofs will be sent to the authors for correction. They should be returned as soon as possible to the editorial office. Please note that the signs XXXXX, 00000, ▮▮▮▮▮▮▮, ????????, etc. indicate that something was missing or unintelligible in the manuscript and the pertinent information should be added during correction.

It is requested that corrections be limited to the elimination of printing errors. Alterations and expansions are to be avoided for reasons of increased costs. The proof sheets are not indicative of the quality of the print. This applies particularly to the lay-out of tables. Due to the particular mode of setting, the corrections of misspellings are expediently carried out at the same time as the author's corrections.

Fifty (50) reprints of each article will be supplied free of charge. These will be shipped after publication of the journal issue. An order form for further reprints (in increments of 50) will be sent with the galley proofs and should be signed and returned with the corrected proofs even when additional reprints are not required.